DOCUMENT RESUME

ED 071 265 EC 050 873

| | |
|---|---|
| TITLE | Me and My Environment. Unit II: Me as a Habitat. |
| INSTITUTION | Biological Sciences Curriculum Study, Boulder, Colo. |
| SPONS AGENCY | Bureau of Education for the Handicapped (DHEW/OE), Washington, D.C. |
| PUB DATE | 72 |
| NOTE | 274p. |
| EDRS PRICE | MF-$0.65 HC-$9.87 |
| DESCRIPTORS | Biology; *Class Activities; *Curriculum Guides; *Educable Mentally Handicapped; *Environmental Influences; *Exceptional Child Education; Guidelines; Inquiry Training; Instructional Materials; Lesson Plans; Mentally Handicapped; Problem Solving; Student Behavior |

ABSTRACT

Presented is the experimental edition of Unit II: Me as a Habitat, which consists of 19 life science curriculum activities intended for the 13-to-15-year-old educable mentally retarded child. The curriculum guide is being used in the final field test prior to revision. Stressed throughout the program are ecological themes, inquiry skills, problem solving skills, environmental elements, and applicational behaviors and attitudes. Five to eight activities for each of the three core study areas within Unit II are given of which the following are examples: seeing is believing, drinking microbes, venereal disease in action, smoking in action, and the use and misuse of drugs. Activities are organized into materials, teaching strategies, and anticipated student behaviors. The three cores study microbes, disease, and environmental choices. The ecological theme stressed is diversity and pattern. Inquiry skills seen to be developed are associating and describing. Problem solving skills emphasized are recording data and discussion and treatment of group data. Environmental elements considered are living things. A desired behavior outcome is skill in communication about the child's environment. (For related curriculum guides see EC 050 871, EC 050 872, EC 050 874 and EC 050 875.) (DB)

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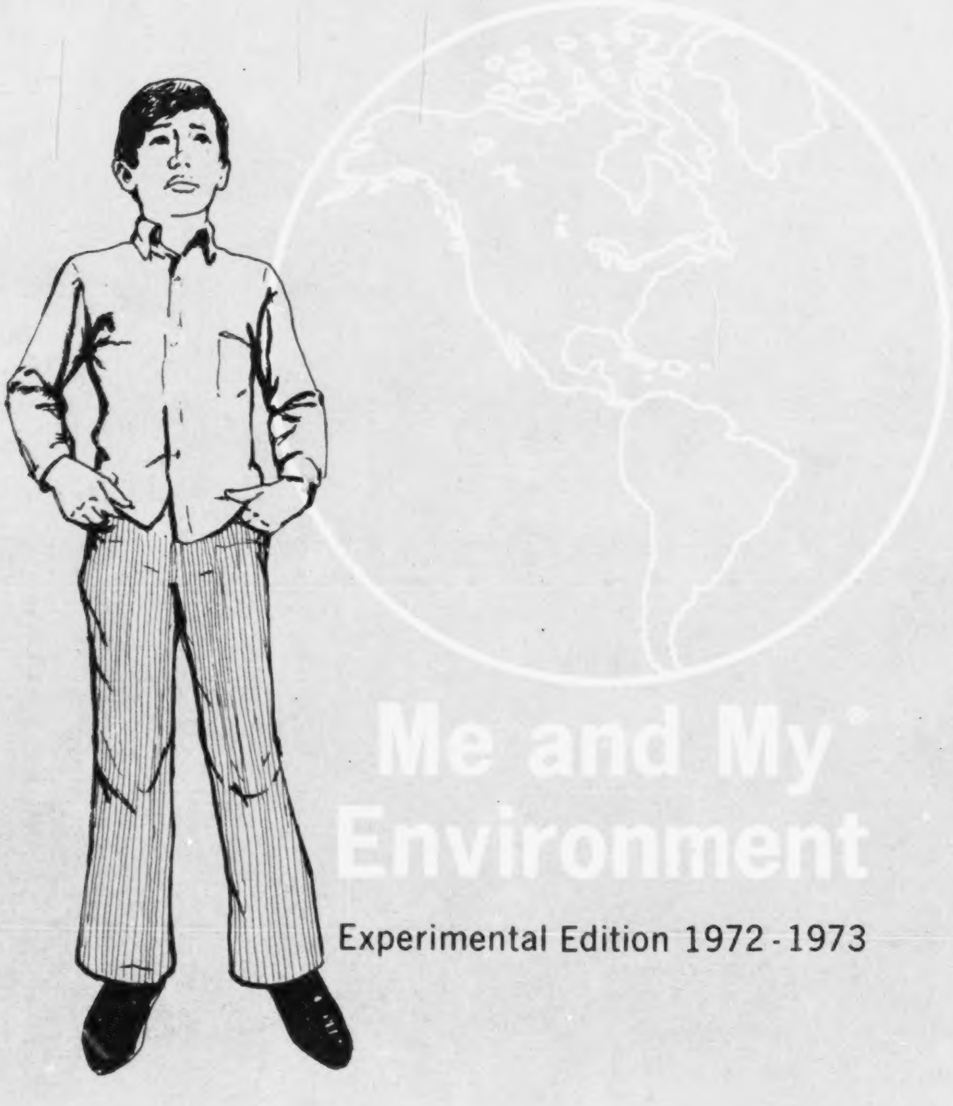

# Me and My Environment

Experimental Edition 1972-1973

**Biological S**

# Life

A Speci

## Unit II:
## Me as a

**Biological Sciences Curriculum Study**

# Life Sciences:
## A Special Education Program

## Unit II:
## Me as a Habitat

Me and my
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**Me and my Environment**

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# INTRODUCTION

The project to develop a life science curriculum for the educable mentally handicapped (EMH) was originally funded in the summer of 1969 by the Division of Research, Bureau of Education for the Handicapped, United States Office of Education. The project is charged with writing, field testing, evaluating, and disseminating materials dealing with topics in life sciences for the EMH population in our schools.

ME NOW, the BSCS model life science program for educable mentally handicapped youngsters in the 11- through 13-year age-group, has been released and is available from Hubbard Scientific Company of Northbrook, Illinois.

On the basis of the success of the ME NOW program, and in anticipation of meeting further student and instructor needs, the Bureau of Education for the Handicapped has provided the BSCS with a three-year continuation grant to develop model materials for 13- to 15-year-old EMH students. Recognition by the educational community of the need for special emphasis on matters of ecological concern led the BSCS staff to decide early in the project that a

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In May 1971, a pla
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1972-73 academic year - Large-sca

Summer, 1973 - Revision

1973-74 academic year - Concl

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portion of the materials for EMH students should focus on environmental studies. The time line for developing this new curriculum, which is entitled ME AND MY ENVIRONMENT, is shown below.

In May 1971, a planning conference was held to prepare guidelines for the development of ME AND MY ENVIRONMENT. The conference was attended by the five members of the advisory committee, four of whom are in the field of special education and the fifth is in biology; the project writing team consisting of five special education teachers and five biology teachers; and the BSCS project staff. Conferees developed guidelines covering areas of environmental concern and utility for the target population of children, the characteristics of this population, and the needs of these children that might be met through environmental studies. A multidimensional model incorporating the science content, cognitive and affective behaviors, ecological themes, contextual focus, and needs of the children resulted from the planning conference. Following the conference, the BSCS project staff prepared a proposed content and objective outline for the curriculum. A thorough study was made of the existing literature covering the physical, social, and psychological needs of handicapped adults; the staff then attempted to identify which of those needs might be met by ME AND MY ENVIRONMENT.

Summer, 1971 - Initial writing conference

1971-72 academic year - Initial testing

Summer, 1972 - Revision

1972-73 academic year - Large-scale field test

Summer, 1973 - Revision

1973-74 academic year - Conclusion of field test

Me and my
Environment

## THE ROLE OF THE TEACHER IN THIS EXPERIMENTAL EDITION

This curriculum has been written by teachers; it will be tested and modified by teachers. BSCS has at
enthusiastic teachers for this development, testing, and modification. Ten of these teachers served a
more were selected as experimental teachers to provide the best possible initial field test of the cur
feedback for the revision depends heavily upon the resourcefulness of these teachers. This means that
including:

1. Implementing the strategies and activities exactly as they have been written. Only when the combi
   curriculum as prescribed are analyzed can its strengths and weaknesses be revealed.

2. Developing a feel for the inquiry strategy, flow of activities, and ultimate student behaviors arc
   this understanding of the rationale of this program, the test teachers must suggest extensions of
   invent yet others as needed that would enable their students to achieve the objectives when the sp

3. Providing timely, accurate, and detailed feedback specifying strengths and weaknesses, modificatic
   activity.

4. Contributing to the actual writing of the curriculum in a few of the open-ended situations. We pu
   at spots where we have given you the opportunity to develop a portion of an activity in depth. Nc
   but it will enable us to identify potential writers among the group of test teachers.

The following outline will provide you with an overview of the major components of the program:

| | Ecological Themes | Inquiry Skills | Problem Solving Skills | E |
|---|---|---|---|---|
| UNIT I. EXPLORING MY ENVIRONMENT | Interrelationships Of Environmental Components | Observing | Experimenting | Spa |
| Sensing My Environment<br>Investigating My Environment<br>Landmarks In My Environment | | Identifying | Knowing What The Problem Is And What To Do To Solve It | She |

BSCS

tested and modified by teachers. BSCS has attempted to find highly skilled, flexible, and modification. Ten of these teachers served as writers to create the materials. Fourteen e best possible initial field test of the curriculum. The success of this test in providing rcefulness of these teachers. This means that the test teachers have several responsibilities,

s they have been written. Only when the combined results of all teachers' use of this ths and weaknesses be revealed.

ctivities, and ultimate student behaviors around which the curriculum is organized. Through the test teachers must suggest extensions of some activities, modifications of others, and tudents to achieve the objectives when the specified strategies are inadequate.

ecifying strengths and weaknesses, modifications, alternatives, and student responses for each

in a few of the open-ended situations. We purposely have provided blank pages in the manual levelop a portion of an activity in depth. Not only will this give ideas to the future writers, among the group of test teachers.

f the major components of the program:

| nquiry Skills | Problem Solving Skills | Environmental Elements | Applicational Behaviors And Attitudes |
|---|---|---|---|
| bserving | Experimenting | Space | The student develops: |
| | | | --a sense of self-identity. |
| dentifying | Knowing What The Problem Is And What To Do To Solve It | | --a success syndrome. |
| | | Shelter | --an attitude of inquiry. |

**Me and my Environment**

| | Ecological Themes | Inquiry Skills | Problem Solving Skills | Env |
|---|---|---|---|---|
| UNIT II. ME AS A HABITAT | Diversity And Pattern | Associating | Recording Data | |
| Microbes And Me<br>Disease In People Habitats<br>Environmental Choices And Chances (Drugs, Alcohol, Smoking) | | Describing | Discussion And Treatment Of Group Data | Livi<br>(<br>(<br>( |
| | Complementarity Of Organisms And Environment | Comparing | Organizing Data | |
| UNIT III. ENERGY RELATIONSHIPS IN MY ENVIRONMENT | | Translating | Explaining, Defending, Answering Why Questions | |
| Introduction To Energy<br>Energy In Food<br>Energy Flow Through Food Chains And Webs<br>Food Making In Plants | Flow Of Energy | Inferring | Asking Questions | Ene<br>( |
| | | | Identifying Variables | |
| UNIT IV. TRANSFER AND CYCLING OF MATERIALS IN MY ENVIRONMENT | | Applying | Identifying Controls | Air |
| | Cyclic Nature Of Processes | Guessing | Interpreting Results | |
| Energy And Material Transfer<br>Decomposers In My Environment<br>Garbage And My Environment | | | Drawing Conclusions | |

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| quiry Skills | Problem Solving Skills | Environmental Elements | Applicational Behaviors And Attitudes |
|---|---|---|---|
| sociating | Recording Data | | --skills in functional, receptive, and expressive communication about his environment. |
| scribing | Discussion And Treatment Of Group Data | Living Things<br>(Plants)<br>(Animals)<br>(Microorganisms) | --skills in recognizing environmental landmarks and utilizing these for orientation and mobility. |
| mparing | Organizing Data | | |
| anslating | Explaining, Defending, Answering Why Questions | | --a recognition of his social dependence on others and his biological dependence on the environment. |
| | Asking Questions | Energy<br>(Food Chains) | --an understanding of the interrelationships between environmental components. |
| ferring | Identifying Variables | | --skills in employing systematic problem-solving techniques to persistent problems of daily life. |
| plying | Identifying Controls | Air | |
| essing | Interpreting Results | | --skills in hygienic personal body care. |
| | Drawing Conclusions | | --skills in the selection, preparation, and storage of food. |

x

# Me and my Environment

| | Ecological Themes | Inquiry Skills | Problem Solving Skills | E |
|---|---|---|---|---|
| UNIT V. POPULATIONS AND SOCIETIES | Finiteness Of Resources | Speculating | Recognizing Problems And Formulating Questions | Wa |
| Behavior Within Different Social Levels | | Predicting | Designing Experiments | Ma |
| Population Size And Complexity | | | | |
| Behavior And Population Density | Population Dynamics | | | |
| Population Size And Resource Use | | | | |
| Population Growth | | | | |
| | Ecological Trade-Off | | | |

SOME GENERAL OBJECTIVES

1. To help the mentally handicapped child develop interests, skills, and positive attitudes through experiences with scientific -- especially biological -- concepts.

2. To provide the mentally handicapped child with challenging intellectual activity at a level commensurate with his ability to respond effectively.

3. To aid the chil
heightened obse
measure of self
for his environ

4. To contribute t
social maturity

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| nquiry Skills | Problem Solving Skills | Environmental Elements | Applicational Behaviors And Attitudes |
|---|---|---|---|
| peculating | Recognizing Problems And Formulating Questions | Water | --an attitude of self-concern, as well as social concern, related to his environment. |
| redicting | Designing Experiments | Man | --skills in making independent decisions that relate to the quality of his environment. |
|  |  |  | --a feeling of competence in dealing with his environment. |
|  |  |  | --a basis for aesthetic appreciation. |
|  |  |  | --skill that may lead to a hobby or avocation over a lifetime. |
|  |  |  | --an attitude about and concern for overcrowding and its social and personal implications. |

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3. To aid the child in establishing functional modes of living through heightened observation, a well-developed curiosity, an increased measure of self-confidence, and a sense of responsibility to and for his environment.

4. To contribute to the development in the child of a higher level of social maturity and emotional stability that can lead to increased

vocational proficiency, realistic self-concept, creative self-expression, and more effective assimilation into the community.

5. To develop in the child a knowledge of himself in relation to his environment, along with a tendency to apply this knowledge to the tasks of everyday living.

6. To contribute to increased knowledge about the learning characteristics and limitations of the educable mentally handicapped pupil, and about effective strategies for instruction.

## BASIC ASSUMPTIONS UNDERLYING THE DESIGN FOR THE CURRICULUM MATERIALS

In the initial discussions with the special education community, some basic assumptions for the development of the life science materials were identified. These were revised somewhat, based on the development and testing of ME NOW, to form the underlying assumptions for the development of ME AND MY ENVIRONMENT.

1. Ideas must be developed with a minimum of reading on the part of the student.

2. Vocabulary, where possible, should involve functional rather than technical language, although technical names are taught when these may be useful to the student.

3. Entry points should be concerned with concrete, tangible "things," rather than with abstract, intangible ideas or concepts.

4. The classroom environment and the materials should not be cluttered with distractors; however, a variety of perceptual modes and instructional media should be used (e.g., sight, touch, smell, etc.).

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5. Activities should be developed in small, discrete units that build on or reinforce a concept or skill.

6. Learning, for the EMH student, requires slower pacing, greater redundancy, and time for participation by each student. The instructional materials should be student-doing rather than student-watching.

7. An activity must involve the student in ways of applying the desired behavior; transfer cannot be assumed.

8. EMH children need and can respond effectively to an activity-oriented instructional approach.

9. The curriculum should be designed to provide students with an experience in science as inquiry, through the exploration of their environment.

10. Most teachers of the Educable Mentally Handicapped will need specific directions in using inquiry strategies for teaching science concepts.

11. The teachers of the Educable Mentally Handicapped, for the most part, are not science-oriented; therefore, the materials should be specific with regard to science techniques.

12. The materials and methods must allow for attention to individual differences and to specific learning characteristics of the population.

13. To achieve the objectives, designers of the materials should attempt to create a balance between detail and motivation; that is, the amount of minute and abstract detail that can be learned is probably a function of the interest and motivation that can be established to deal with it.

Me and my
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MAJOR AIMS FOR ME AND MY ENVIRONMENT, A JUNIOR HIGH EMH SCIENCE CURRICULUM

The curriculum includes instruction related to the personal well-being, self-worth, confidence, and successful coping of each person to meet persistent daily life problems. The major aims are:

1. Development in each child of a sense of identity as a person who has some degree of control over and can act on his environment. This will lead to a degree of self-determination based on a rational coping with situations rather on a passive compliance or an impulsive response to problems.

2. Development in each child of a success syndrome. More than anything else, each activity is intended to be a success experience for each child. It is the teacher's responsibility - almost obligation - to see that each child succeeds at a level that is challenging to his abilities and that preserves his self-respect. It is a further responsibility of the teacher to point out his achievement. As a group, the students should help each individual fit what he has done into a pattern of accomplishment.

The curriculum is intended to be intellectually stimulating, and exploratory for each student, and to induce him to become actively involved. It should encourage the following outcome:

3. Development in each child of an interest that could become a hobby or avocation over a lifetime (through an exposure to an array of experiences in science). It is hoped that many children will find some area -- perhaps growing plants, caring for animals, identifying flowers, collecting things, or simply enjoying outings into the country -- that they feel strongly about and can develop some competence or knowledge in. This would provide a means of self-expression, and (perhaps) allow some degree of sharing or involvement with others.

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The curriculum is organized around eight ecological themes. There are some specific content objectives related to these. The ultimate objectives are:

4. Development in each child of a sense of relationship and empathy with other living things. It is hoped this will lead to a positive regard and caring about what affects them as individuals and as a group, because what affects them affects the community of man.

5. Development in each child of an understanding of environmental conditions that will lead to a sense of responsibility for the environment and actions that protect or improve it.

These are the five overriding aims that should serve as reference points for teachers and guide much of what they plan and do in the classroom. A junior high student in one of the first classes that tested these materials expressed what is needed this way: "I just feel that if we want these kids to improve, and that's the whole idea of it, you have to bring these kids a certain amount of happiness. You have got to make them feel that they are really wanted. If they are wanted, they will try a little harder. That sounds kind of childish, I suppose, but it works...Another thing...always inspire: 'Come on, put your best foot down -- try it again.' You know, things like that. I mean, to me, just the tone of voice makes a difference to me about going out or staying in this class. I just feel that they don't want me -- And they don't, (when their tone says) 'Oh, Eddie! Why did he have to come today?'"

## ECOLOGICAL THEMES

Since the original planning conference for the development of ME AND MY ENVIRONMENT, eight ecological themes have emerged which seem to encompass the major ideas and concepts (i.e., the science content) that the curriculum development team sees as appropriate for this student population. These themes are broad generalizations, some understanding of which appears to be a prerequisite for coping with one's own environment as well as with society's environmental problems. The themes are probably best thought of as unifying threads which run throughout the curriculum.

1. INTERRELATIONSHIPS OF ENVIRONMENTAL COMPONENTS.

> "When we try to pick out anything by itself, we find it hitched to everything else in the universe." -John Muir

Life is entirely dependent upon the things that the environment supplies: air, water, food, shelter, and subtle things such as a suitable temperature and humidity. Animals depend upon other animals or plants for food. Scavengers (carrion and detritus feeders) and decomposers (bacteria and fungi) obtain their nutrition from the remains of living organisms. Green plants depend upon sunlight, air, water, and minerals from their environment and form the base upon which all organisms are interconnected by food chains and complex food webs.

Organisms interact with each other, and with the environment, in a variety of ways in addition to the eater-eaten relationships of food chains or webs. Plants compete with each other for light, water, soil nutrients, and growing space. Animals compete for available food resources, space, and shelter. Other relationships include parasite-host and pathogen-host interactions.

The important consequence of this theme is that actions are not singular, nor do they have singular impact. Man's competitive interactions have far-reaching, often unknown consequences. For example, clearing land for raising agricultural crops destroys the habitat for plants and animals and disrupts certain food webs, while establishing suitable habitat for agricultural species. The resulting monocultures are often vulnerable to attack by pests because populations

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of natural predators have been removed. Attempts to control these competitive organisms through applications of pesticides may simply exacerbate the situation by killing nontarget organisms such as predators, scavengers, and decomposers which are actually beneficial. Similarly, herbicides used in control of weeds which are competing with crops may destroy habitats for natural predators, making additional applications of insecticides necessary; these in turn may kill more nontarget beneficial organisms. Numerous studies have shown that large-scale, indiscriminate use of pesticides may, in the long run, actually decrease agricultural productivity. In addition, manufacture, transport, and application of pesticides and fertilizers contribute to air and water pollution, thereby adding to the degradation of vital resources upon which all life depends. This is but one simple example of a myriad possibilities. If we expect students to start thinking in terms of consequences, it is imperative that they realize and appreciate that life depends upon interrelationships and that apparently simple actions may have far-reaching implications.

## 2. DIVERSITY AND PATTERN.

There is great diversity in the environment. Differences in climate and topography generate different environments made up of different communities of plants and animals. Plants and animals differ as they are adapted to perform different functions. Even within a species there is diversity. But, it is possible to find patterns within that diversity. Recognizing patterns helps one conceptualize and understand the functioning and interrelationships of all environmental elements within the biosphere.

If one looks at the organisms in any habitat, he discovers a variety of sizes, shapes, and colors. Further examination will reveal groups of organisms that are related in various ways, e.g. some produce food (producers) while others feed upon these producers (consumers). We find that the organisms are all related in a pattern forming a food web.

Diversity is thought to enhance the stability of a system, for it provides alternate channels of energy or materials flow if part of the system is lost or overburdened. For example, consider a single food chain: plants, grasshoppers, frogs, snakes. If one link in the chain is lost, e.g. the grasshoppers are wiped out by insecticides, all links beyond that one will also be lost if they have no alternative sources of food. In a complex food web, however, a link may be lost without destroying the system; links beyond the missing one may turn to another channel for food (e.g., the frogs may exploit another type of insect food resource). Thus, preserving diversity may be necessary in preserving the stability of the life support system of the biosphere. Man cannot exist alone.

It is often said that variety is the spice of life. Diversity makes the environment less monotonous and more interesting. This aesthetic component should receive emphasis in the curriculum.

3. COMPLEMENTARITY OF ORGANISMS AND ENVIRONMENT.

A complement is something that completes or fills out something. Complementarity in this context refers to the completion brought about by interrelationships which are dependent upon one another. A few examples should clarify the meaning of this theme.

Organisms use material things from the environment and, in turn recycle things to the environment which may be used by other organisms. Thus, the presence of organisms modifies the environment in various ways, some of which make the environment more suitable for other organisms. Plants use carbon dioxide and release more oxygen than they use. Consumer

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organisms (animals, decomposers) use oxygen and release carbon dioxide. Both the producers and consumers are dependent upon the environment for these resources, and the balance of these materials in the environment is likewise dependent upon both groups of organisms.

Without scavengers and decomposers there would be a prodigious accumulation of the remains of once living organisms cluttering up the environment. Probably all of the available carbon, oxygen, and other essential elements would be tied up in these dead remains. Life would have come to a screeching halt a long time ago!

The presence of plants improves the water-holding capacity of a watershed and helps prevent erosion of the soil by wind and water. Plants reduce the rate of evaporation of soil water but at the same time release it to the atmosphere. Thus, plants play a vital role in the water cycle and influence local climates through the regulated flow.

Plant succession is a classic example of complementarity. An abandoned field, new roadside, or similar disturbed area is quickly invaded by hardy pioneer plants which we usually think of as weeds. As these grow, die, and decay, they modify the immediate environment and are replaced by plants which are better adapted to the new conditions. These, in turn, cause further modifications and are replaced by other populations; finally a relatively stable community exists that is able to replace itself and that is in dynamic equilibrium with the environment. Such communities are usually referred to as climax communities.

## 4. FLOW OF ENERGY

> "The biotic stream is capable of flowing in long or short circuits, rapidly or slowly, uniformly or in spurts, in declining or ascending volume. Ecology calls this sequence of stages in the transmission of energy a food chain, but it

can be more accurately envisioned as a pipe line---(which) leaks at every joint." -Aldo Leopold.

Energy may be defined as the capacity to do work. To cause movement requires energy; indeed, to do anything requires energy. Life depends upon this continuous flow which is initiated by a constant input of energy from the sun, its photosynthetic transformation from light to chemical energy by the producer organisms (green plants), its passage from organism to organism along various food chains, and its eventual loss as radiant heat to outer space. Each time that energy is converted or transformed at each step along the way, some of it is lost from the system and is no longer available to do useful work. This, in simple terms, is the second law of thermodynamics. Green plants are able to fix photosynthetically only a portion of the sun's energy that they intercept. In turn, some of the energy which they trap and store is used by the plants for such things as growth, reproduction, and the movement of materials. Thus, only a portion of that original stored energy is available to the organisms which eat the plants. These organisms likewise use energy in their various life processes so that only a small portion of the energy which they received from eating plants is available to their predators. As a consequence, only about one-tenth of the energy at any step in a food chain is available to the next level. An acre of agricultural land will provide enough food energy for about 1.5 persons for a year if planted in wheat, but will feed only 0.1 person if used to raise beef cattle!

Society's use of fossil fuels is simply a utilization of energy captured and stored over millions of years by green plants. As such, this source of energy is in finite supply and is a nonrenewable resource. Electricity generated by fossil-fuel burning plants can similarly be traced to the sun. Hydroelectric plants offer a limited

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alternative source of electricity. This source is also finite because of the limited number of adequate sites. The use of nuclear reactors (which is simply a duplication on earth of the natural processes taking place on the sun to release energy) to generate electricity offers an alternative source of energy for society; this source, however, as are all others, is governed by the laws of thermodynamics. The energy, once released, flows through the system and is eventually lost to space as heat. This source is also finite, but refinements in the technology of the breeder reactor may make it a very large source. The exploitation of nuclear energy is fraught with unanswered questions and problems. How can we safely dispose of the radioactive wastes generated? Can the earth dissipate the huge amounts of waste heat generated? What effects will this heat have on climates, ecosystems, organisms?

It should be emphasized that nuclear energy offers little hope, at present, of replacing the sun as a life-supporting source of energy. In the forseeable future, man's only source of food energy will be the sun, through photosynthesis of green plants.

## 5. CYCLIC NATURE OF PROCESSES.

> "All the rivers run into the sea, yet the sea is not full."
> -King Solomon

In contrast to energy, materials (matter) are continuously cycled from living to nonliving systems. Materials necessary for life are in finite supply, and if they were not constantly cycled, life would simply run out of resources and cease. Some examples include the water cycle, the carbon dioxide-oxygen cycle, the nitrogen cycle, and the cycling of various essential minerals such as calcium, potassium, sulfur, and magnesium. Decomposer organisms play a most vital role in many of these cycles, releasing materials which have been incorporated into living organisms so that they are once again available to other organisms in the environment.

Man's present exploitation of consumable resources, in most cases, upsets these natural cycles. The manufacture and ultimate discarding of nonbiodegradable products removes important elements and compounds from the natural cyclic processes of the ecosphere and could ultimately lead to the exhaustion of such resources for the life support system. Burning of fossil fuels is changing the natural balance of oxygen and carbon dioxide in the atmosphere, with the consequences largely unknown. Degradation of air and water through pollution and the application of pesticides destroys organisms which are vital to cyclic processes.

## 6. FINITENESS OF RESOURCES.

To paraphrase Barry Commoner: Everything has to come from somewhere. The earth has been likened to a spaceship because of its finite supply of all material resources. Inasmuch as life depends upon a continued supply of resources, things have to be used over and over. Continued exploitation of any resource will lead to its exhaustion unless that resource is recycled. The demands of today's technological societies are placing tremendous burdens on the earth's resources and, at the same time, the wastes generated are making other resources unavailable or unfit for supporting life. Projections indicate that we will have depleted our supply of fossil fuels and several important metals resources early in the next century.

Through photosynthesis, food is a renewable resource so long as the natural cycles are able to resupply the raw materials necessary, and so long as environmental conditions necessary for plant life are maintained. But, the amount of food that can be produced on the earth at any one time is finite! There is only so much area available, only so much sunlight that can be intercepted, and only so much of the required raw materials available.

The consequence of this theme is that an indefinite continuation of growth and an increasing use of resources is impossible when the supply

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of all resources is finite. This is true of population, food consumption, resource utilization, technology, gross national product, or any other parameter which one chooses to measure. And all noteworthy predictions indicate that we are very rapidly reaching the limits of growth. Most of us will probably experience the dire consequences!

## 7. POPULATION DYNAMICS.

A population refers to a collection of individuals of the same species occupying a given space at a given time. The size of living populations is determined by four factors: rate of birth, rate of death, rate of immigration, and rate of emigration. Populations tend to grow geometrically (e.g., 2, 4, 8, 16, 32,...) to the limit (carrying capacity) of their environment as determined by the available food, space, predation, and disease. They then either level off and exist in some fluctuating equilibrium with other populations, or they crash back to some low level. A common misconception is that all biological populations tend to follow the first pattern: growth which is described by an S-shaped curve up to the carrying capacity, followed by a fluctuating equilibrium. There are, however, many biological populations which dramatically overshoot the carrying capacity of their environment and, as resources are rapidly depleted, crash back to a low population level. A blowfly population is a good example of the latter. Upon arrival at a carcass, the population increases rapidly, completely overshooting the carrying capacity or the environment's capacity to sustain the population for any appreciable length of time. As the food resource is quickly depleted, the population crashes back to the low level of a few adult flies who are searching out a new carcass to feed upon.

The strategy is simple -- exploit the environment for all it's worth while it is here and hope that a few of the many adults produced in the process will survive long enough to make it to the next carcass. There is evidence that the characteristics of human population growth are similar to those described for the blowfly, and our present exploitation of the earth's resources is certainly analogous to the strategy employed by the blowfly. While such a strategy may be sound for organisms like the blowfly, it certainly would be disastrous for mankind. The earth is the only carcass that we have.

Since resources are finite, no population can continue to grow forever. The human population has grown geometrically over the past few centuries. Doubling time of the human population is currently less than 35 years, and the most optimistic estimates indicate that this population will exceed the carrying capacity of earth within a century (some suggest that we have already passed the carrying capacity and many demographers and ecologists have predicted a crash in the human population prior to the year 2020). Population control and zero population growth will be accomplished, either by self-imposed means or by natural means. If the latter, it will occur through starvation, disease, war, or lower fecundity. There are no other plausible alternatives!

Perhaps the greatest service that this curriculum could hope to perform is to help this population of youngsters understand the implications of population growth and the necessity for limiting family size. But, to achieve the desired end, the curriculum must provide the students with an understanding of the ways and means by which family size may be controlled. This is one area where individuals can make decisions, can have an influence, and can contribute to the solution of what may be mankind's most pressing problem!

8. ECOLOGICAL TRADE-OFFS.

"Every coin has two sides."

As we have seen, all environmental components are interrelated in intricate, complex ways. No action has singular impact, and thus any course of action must be carefully weighed and alternatives considered. Any course of action involves ecological trade-offs.

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For example, consider society's use of electricity. Many of us enjoy a life style which is very closely tied to the conveniences and labor-saving devices powered by electricity. The generation of that electricity is a major factor in environmental degradation. By and large, we have made the decision to forego a certain amount of environmental quality to enjoy the leisure and convenience of electrical appliances. Projections indicate that increases in demand for electrical power will require strip mining vast areas of Wyoming and Montana, exploiting oil shale reserves of Colorado, depleting the petroleum reserves of the Alaskan north slope (with the inherent dangers to the arctic tundra), and constructing large numbers of nuclear power plants. In all of these activities, we will trade off various amounts of environmental quality.

## INQUIRY PHILOSOPHY

We do not view science as a collection of facts, but as a process by which facts are gathered, interpreted, and organized into conceptual schemes. We have included facts, and activities structured to generate facts, not for their intrinsic value but to provide the means through which concepts and generalizations are developed through an inquiry strategy.

Inquiry, simply defined, is finding out why. Inquiry may be defined as a process of questioning, of seeking information, of discovering. For EMH students, as for others, the excitement of discovery adds meaning to learning. Inquiry allows the student a natural avenue for satisfying his curiosity about his world. An inquiry strategy is one which poses a question or problem and then guides students through inquiring kinds of behaviors such as observing, describing, identifying, comparing, associating, inferring, applying, predicting, translating, guessing, speculating, creative thinking (divergent production), and value judging.

There are degrees of inquiry. On one end of the scale, a question is posed and the student, after analyzing the question and applying his experiences and background information, answers the question. At the other extreme, the student poses the question after being given a certain amount of background information, and then proceeds to answer the question after being given a certain amount of background information, and then proceeds to answer the question by designing an experiment, conducting the experiment, and interpreting the results.

All degrees of inquiry have a common ingredient: the answer is not given; it is arrived at by the individual after he has analyzed information relevant to the question. The distinction is obvious -- in inquiry strategies the questions are answered by the students and not the instructor.

If knowledge is acquired, at least in part, through an inquiry strategy, then the student should be able to use that strategy in acquiring further information and solving future problems as they arise.

It is assumed that after completion of the curriculum, the student will ask questions that emerge through the interaction of environmental inputs with the experiences we have provided. He will be more able to seek answers to these questions through his ability to acquire and interpret information.

INQUIRY SKILLS

1. OBSERVING is a fundamental activity of scientists. The accumulation of information which may lead to knowledge comes primarily from what we see, hear, taste, smell, or touch. A major function of this curriculum should be to offer a rich and varied environment of concrete experiences for the students. As students gain experience, accuracy in observing and recording the details of their findings should be increased. Observing should frequently

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include an element of divergent production by asking the students to heed all of the details, extraneous and otherwise, that they can. Opinion, interpretation, and speculation are not, of course, a part of observing.

2. IDENTIFYING involves the recognition of what something is or of certain properties that make it possible to categorize the thing. This includes the determination and/or matching of a name or definition, the use of a key or guide, or the recall of a label from previous experience.

3. ASSOCIATING involves seeing what things go together -- seeing relationships or recognizing common properties. Associating may be thought of as a prerequisite to classifying, or organizing data or information for some purpose. Grouping (classifying), through associating, may enhance conceptualizing.

4. DESCRIBING involves writing or verbalizing orally all of the relevant observations about a thing so that another individual would be able to use the description to identify the object or share in an event he did not actually experience. Emphasizing description should enhance development of observational skills.

5. COMPARING involves the inspection of two or more objects (events) to note similarities and differences. It is closely related to the student's ability to distinguish between critical differences and to generalize recognizible similarities. This skill could involve the use of referents other than the things compared. It is necessary that one have an understanding of such comparatives as hotter-colder and smaller-larger, as well as a comprehension of their related values, e.g., warmer-cooler and littler-bigger.

6. TRANSLATING is the skill in which recorded observations (data) are expressed in another symbolic form. The conversion of tabular

information into a graph or of a verbal description into a drawing exemplifies this.

7. INFERRING involves drawing a conclusion based on evidence. It requires going beyond the information at hand to describe an effect or answer a question. It involves extrapolation and implication, and is closely related to two of the problem-solving skills: interpreting results and drawing conclusions.

8. APPLYING involves the utilization of a learned task or skill in some other situation than that in which the task or skill was originally learned. For example, if a child has learned to orient the top of one map with north, an application would be to orient another map in a similar manner.

9. GUESSING is the generation of ideas about outcomes in a data-poor situation. It involves using one's common sense and hunches to make the most informed judgment one can.

10. SPECULATING is the process of generating ideas about the nature or outcome of something one has not had the opportunity to observe, but about which one can think based on past experiences. It may be that a great deal is known about the subject, but without having observed it, one must describe the event from imagination.

11. PREDICTING is the skill of making informed estimates of what should happen in a given situation, based on knowledge of what enters into the situation and previous experience.

12. DIVERGENT PRODUCTION refers to the process of generating as many ideas about something as possible.

13. VALUE JUDGING involves more than simply expressing opinions or preferences. It is the comparison of things and the assignment of relative value to them, based upon some set of criteria. In this curriculum, the WHY of valuing should be sought.

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## PROBLEM SOLVING SKILLS

Inquiry is finding out WHY. The process of finding the answers to WHY is problem solving. The ME AND MY ENVIRONMENT science curriculum is a structured sequence of activities that enable the student, through success, to learn to seek the answers to WHY. It is hoped that the experiences provided in the curriculum will enable the student to face and solve the problems of everyday life, both now and later.

There are at least three levels of mastery of problem solving skills. The minimum level is an awareness of the skill. The second level is the functional ability to perform it. The highest level includes the capability of designing an original experiment and carrying it to completion. It should be borne in mind that problem solving behavior is a complex package involving past experience, motivation, cognitive development, etc. The development of problem solving skills should be closely related to the appropriate inquiry skills, concepts, and other organizers of the curriculum.

A brief description of the intended interpretation of the problem solving skills follows in what we consider to be a hierarchy of easiest to most difficult.

1. EXPERIMENTING is doing something to see what happens. It is having the opportunity to "mess around" with a given piece of apparatus or set of materials, to pursue individual curiosity or interest, to explore, and to find things out.

   Some examples of experimenting include: investigating the properties of environmental objects (e.g., which ones will float, which ones can be burned, which are man-made, etc.), having the opportunity to use thermometers or balances, raising a classroom pet or plants, burning things under a pinwheel, having time to experiment with the balances, etc.

It is important to distinguish between experimenting as we have defined it and the formal aspects of experiment and experimental design. Note that the formal aspects are dealt with as a separate category and that designing experiments is thought to be the most difficult of the problem solving skills.

To encourage development of this skill, instructions such as "ALLOW STUDENTS TO MANIPULATE AND EXPERIMENT WITH THE BALANCES," "CAPITALIZE ON STUDENT INTEREST BY ALLOWING STUDENTS TO OBSERVE AND HANDLE THE PETS," etc., are given to the teacher.

2. KNOWING what the problem is and what to do to solve it. Defining the problem and its parts clearly is an important first step in any problem solving situation. We assume that recognition and definition of a problem represents a difficult task for this student population, and has therefore been placed high in the problem solving skill hierarchy. The purpose of this skill is to assist students through many experiences in recognizing that a problem exists, in defining that problem, and understanding how answers to that problem might be obtained. This skill must be emphasized (that is, the problem made explicit) for the logical development of those skills which follow. Here we are concerned that the student know the question under investigation and clearly understand the methods to be used in attempting to answer that question. The materials should emphasize, for both teachers and students, that science is a process of finding answers to questions. There is a subtle difference between telling the student the answer to the question he is investigating (e.g., "To see if it is warmer in the sun or in the shade") as opposed to making it clear what the task focus is (e.g., "To see if there are differences in the temperature of different parts of the environment, and if so, see if we can discover what makes the temperature different in different places").

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3. RECORDING DATA questions of science are answerable through observation and collection of data pertinent to the question. Recording of observations is a necessary skill to enable the investigator to recall the observations and discuss and interpret them in view of the question. Included here is the collection and transcription of information called for by the question. Making sketches, notes, taking pictures, recording sounds, recording measurements, etc., are included.

4. DISCUSSION AND TREATMENT OF GROUP DATA -- COMPARING RESULTS A look at the outcomes of each student's or student group's investigation and a discussion of why one result may differ from another should emphasize the dynamics of group discussion and dialog rather than recitation and monolog. Discussion of variability of results should assist students in the identification of variables which may influence outcomes. The ability to express or talk about what was done is involved here, with students operating primarily at the observing, identifying, describing, and comparing levels of cognition. Discussion of individual or group results provides the teacher with an opportunity to assess student understanding of the investigation and to recognize possibilities for further investigation, alternative activities to re-emphasize particular concepts, or review.

5. ORGANIZING DATA The ordering and grouping of recorded information makes it easier to interpret and see relationships. Included in this category are tabulation of data, averaging or deciding on best estimates, any visual representation such as line or bar graphs, and pictures or schematic representations. This is the most difficult skill directly related to data for students to become proficient in. Organizing data often involves the inquiry skill of translating information into a different symbolic form.

6. EXPLAINING, DEFENDING, ANSWERING WHY QUESTIONS This involves discussion of a more sophisticated level than that previously considered. Explaining should assist in the development of the idea of cause and effect. It implies the students' understanding of the question, the procedures, and some ability to interpret results. Defending encourages confidence in one's procedures and interpretation of outcomes. Answering why questions requires an understanding of the questions and task as well as forcing students to analyze data and make interpretations. In the activity Food For Sleep, such questions as "WHERE DID THE HEAT ENERGY COME FROM?" "HOW DO YOU KNOW?" and "WHY ARE YOU TAKING THE TEMPERATURE OF ALL THREE CONTAINERS?" fall into this category. To answer such questions, the students are often operating at the inference level of cognition.

   Specific examples of such questions are included in the guide. It seems particularly appropriate for the teacher to be asking individuals or groups these kinds of questions as they proceed with an investigation. We need to emphasize, by providing questioning strategies, that discussion of this sort with individuals and small groups is an effective method of instruction which provides immediate feedback to the teacher.

7. ASKING QUESTIONS This category refers to student questions which are raised as a result of their observations, experiences, and experimenting. Teachers are given examples of the kinds of questions that students may raise and suggestions of how such questions should be dealt with.

8. IDENTIFYING VARIABLES Identification of those variables which may influence the outcome of an investigation is necessary if one is to understand the concept of a controlled experiment, if one is to make any sort of an appraisal of the

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design of an experiment or investigation, and if one is to make an intelligent interpretation of the results of an experiment. The first step toward these goals is to realize that many factors may influence an outcome and to be able to recognize and identify some of these factors. Students can learn much by asking about what affected the results. This skill is highly related to predicting.

9. IDENTIFYING CONTROLS Once the students are able to identify variables that may influence an outcome, the idea that all variables except the one under investigation must be held constant can be developed.

10. INTERPRETING RESULTS This is perhaps the most important of the problem solving skills, and may be the most difficult to develop. Explicit models for teachers and students are provided. They deal with the data collected and interpret it in terms of the question asked. Emphasis is placed on recognizing the limitations of data and that the data may or may not have answered the question; not going beyond the data; and recognizing the need for further investigation. Teachers are cautioned to avoid the temptation of ignoring the data and simply providing "the answer."

11. DRAWING CONCLUSIONS Interpretation of results may warrant drawing conclusions. The emphasis here is on drawing only those conclusions that are supported by the data collected. Some forced conclusions are inevitable because of the difficulty of providing experimental evidence; however, great care is exercised to avoid forced conclusions when an experiment is conducted and data gathered.

12. RECOGNIZING PROBLEMS AND FORMULATING QUESTIONS This skill is a necessary prerequisite for the general application of the other problem solving skills outside the classroom situation. In other

words, if we expect students to apply the problem solving skills above to their daily problems, it seems necessary that they be able to recognize that a problem exists and be able to state an appropriate question. To develop this skill, the students are presented with events or phenomenon that present an identifiable problem, and then given the opportunity to define that problem.

13. DESIGNING EXPERIMENTS Once the students are able to recognize a problem and formulate a question, an experiment to answer that question may be designed. The design should include identification of variables and controls, methods for observation, gathering data, organizing and presenting data, etc. It is assumed that this student population will be able to perform this skill only after a great deal of experience with the preceding skills.

## SPECIFYING STRATEGIES FOR INSTRUCTION

The model for inquiry used in these materials demands that the focus of classroom activity be on student involvement with materials and activities. The teacher functions as a catalyst in generating pupil response in the learning situation. The response desired may be attitudinal, cognitive, or psychomotor: verbal or nonverbal. The teacher's behavior also falls in these same categories, but with an important difference: the teacher must be totally conscious of his role as a stimulus, while the student is generally unaware that he is being manipulated by strategy.

To communicate maximally with the teacher, we feel we must carefully describe as much as possible of the pattern of interaction upon which the anticipated results depend. The whole intent of this curriculum would be defeated if this pattern is not understood and implemented. We know, for example, that teachers often fail to allow children the opportunity or the time to think for themselves when a problem is

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posed. They also frequently impose their observations and interpretations of things on children rather than allow the children to express their own views of things observed. We hope, therefore, to provide for teachers a model of strategy in these materials that will -- if initially studied and used -- demonstrate the benefits we describe for it in terms of pupil response behavior.

We do not anticipate that we can predict all that will occur with individual students in the classroom. We hope that we can, however, provide enough reminders to the teacher so that he will deal with unexpected or unpredicted events in the same mode in which the materials are written.

## LEVELS OF OBJECTIVE STATEMENTS

### UNIT GOALS

Unit goals are broad general statements that define long-term goals of a major portion of the unit. An initial statement, "The student will," is understood in each of the goals. They are defined as statements that capture the intent and emphasis of the curriculum. They also serve the function of organizers toward which the core objectives are directed.

### CORE OBJECTIVES

The core objectives (stated in student behaviors) refer to the desired outcomes for sequences of activities. The role of these objectives is to summarize what the student will be able to do as a consequence of each of the activity sequences. The core objectives provide a cognitive map for the teacher to extend or elaborate on. These core objectives may also serve as evaluative guides to assess short-term progress and attainment of students.

**Me and my Environment**

## ACTIVITY OBJECTIVES

Activity objectives are enabling or performance objectives that relate to the specific activity. They identify the actions or behaviors students must perform or acquire to insure their success in achieving the broader objectives of the curriculum. The role of the activity objective is to provide the teacher with specific instructional landmarks both to plot the course and to chart student progress. The objectives include information which the student has repeated or restated, experiences he has had, actions he has performed, and products he has made.

## ANTICIPATED STUDENT RESPONSE BEHAVIORS

These focus on specific *actions or interactions occurring during instruction*. They describe what we predict students will do or say in response to some specific strategy.

## TEACHING THE MATERIALS

It is often said that man is a curious animal and that science is a content vehicle to capitalize on this phenomenon.

Science, then, for the EMH student, capitalizes on the student's natural curiosity about himself. Science is exciting, and ME AND MY ENVIRONMENT relies on this excitement. This science program has been designed to fit into the already existing curriculum framework and within individual teaching philosophies.

The amount of time spent on each activity can be tailored to fit the mood of the class and the teacher. An averate of 45 minutes may be required for all activities. Some activities will require extensive time, perhaps several days. The main point in teaching ME AND MY ENVIRONMENT is not to hurry -- to allow sufficient time for inquiry to occur.

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The ME AND MY ENVIRONMENT sequence may span three years, or it may take less time. The pace can be set by the individual teacher.

Particular attention has been given to articulating the science curriculum with the other parts of the instructional program. Sight vocabulary is included in many of the activities, and suggestions given for using these words in spelling and vocabulary lessons. Math skills are an integral part of science, and the lessons provide application of the student's math skills.

## PLANNING GUIDE

Teaching the materials for the first time will require preparation time. Less preparation time is required after that. The teacher's planning guide will help you prepare materials in advance. For example, if a film is to be ordered, the planning guide will remind you when. The guide should be followed rather rigidly when initiating an activity.

## OVERVIEWS

Each UNIT and CORE is provided with a summary "roadmap" to give the teacher an insight into the direction or groupings of activities.

## RATIONALE

Each UNIT and CORE is provided with a section to provide background into the why of the particular material used. These rationales should be read, thought about, and continually referred back to in order for you to focus on and subsequently provide *why intentionality* to your students.

BACKGROUND INFORMATION

Some pertinent points which are not necessarily developed in the curriculum itself but which will provide you with useful information have been incorporated in this section at the beginning of each CORE.

REVIEWS TO SUCCESS AND CLUES TO SUCCESS

A portion of the evaluation program during the first field testing of ME AND MY ENVIRONMENT entailed the use of what was basically an objective pretest, administered on the days before beginning instruction on each unit, and an identical posttest administered the days following completion of each unit. The items included in each test were specifically designed to secure information on the students' background knowledge as well as to secure data about the success of the materials. They were not used to evaluate the youngsters.

Because the item designs for use with this student population proved highly effective, many of these questions, along with some situational tasks, have been incorporated into two *instructional assessment sections*. The first of these, "Clues to Success," appears periodically within various activities so that you can have immediate feedback on the effectiveness of the materials and instruction. At this point you have the unique opportunity to determine whether or not your students are ready for the next activity or whether a modification, repetition, extension, or review of certain activities is necessary before proceeding.

The "Reviews to Success" are generally concluding activities in a CORE. They enable you to assess the effectiveness of instruction for the entire CORE and to decide if the students are prepared for the next set of objectives.

WORKSHEETS

The worksheets in the program are used in a variety of ways: a) as reinforcement to general or specific objectives; b) to introduce

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new information and to record data; c) to enhance the interest in an activity; d) as a culminating activity to review what has been covered in previous lessons. Difficult worksheets are duplicated on daylight slides. These worksheets should be demonstrated on the chalkboard before they are attempted by the individual students.

35mm SLIDES

This medium broadens instructional opportunities, especially during inquiry activities. The projected image should be used both by the teacher and by most students during instruction. The teaching strategies give specific instructions for using them.

You need not completely darken your classroom when using the slides. Your students should be able to write or read at their desks or move from their desks to the board while the slides are being shown. It will be desirable, however, to turn off those lights or darken those windows where the light is reflected directly from the chalkboard.

The largest possible image is usually best for the students to see clearly. Therefore, place the slide projector as far as possible from the chalkboard, but so that the image projected does not extend above or below the edges of the board.

It is expected that students and teachers will often use chalk to mark directly on the projected image.

Be sure that you are familiar with the operating instructions for the Carousel Projector and that you observe the manufacturer's cautions for insertion and projection of slides, trays, bulbs, and lenses.

GAMES

Perhaps the most ambitious of the endeavors has been to promote certain objectives through the use of games and game theory. Besides providing variation to the instructional mode, the games are used to dramatize some of the major concepts in the curriculum, as well as to give experience in cooperation and taking turns.

BOOKLETS

This medium is used as a variation to the worksheets and 35mm slides. It combines a minimum of reading with cartooned illustrations to present somewhat detailed factual information.

POLAROID CAMERA

To increase the opportunities for involving all students in the activities, a Polaroid camera has been included as part of the instructional materials. The camera is provided through the courtesy of the Polaroid Corporation.

A camera in the classroom can serve as a valuable motivation device for students, as well as a help in prolonging their ever-so-short interest span. The instant feedback from the pictures is a replay of the actual class activity, a photographic record that can be used to compare before and after conditions, a progress report of growth and development, or an assessment of the learning that took place in an activity. Actually operating the camera, manipulating parts, focusing, developing, and viewing the finished product affords an ego-building experience. Such experiences will help the student develop self-esteem and self-confidence, thus contributing to the development of a success syndrome.

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## MATERIALS

- Camera (Polaroid Square Shooter)
- Polaroid film
- Flash cubes
- *Masking tape
- *Yardstick
- *Marking devices
- *Clock with second hand
- Worksheet 0
- *Foot ruler

## TEACHING STRATEGIES

Floating Activity. Meet The Camera

*Most students will not know how to operate the Square Shooter Camera. A good understanding now of how it works is essential to the successful use of the camera in subsequent activities.*

Begin by saying:

> MANY OF OUR CLASS ACTIVITIES THIS YEAR WILL REQUIRE TAKING PICTURES. HOW MANY OF YOU HAVE EVER USED A CAMERA?

Then ask:

> DO YOU KNOW WHAT KIND OF CAMERA THIS IS? (Holding up camera.)

If yes, then ask:

> HAVE YOU TAKEN A PICTURE WITH A CAMERA LIKE THIS?

If a student has operated a Polaroid Camera previously, select that student to assist you with the activity.

Say:

> THIS CAMERA IS CALLED A POLAROID SQUARE SHOOTER. IT MAKES PICTURES THAT YOU CAN

BSCS

## EACHING STRATEGIES

Meet The Camera

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## ANTICIPATED STUDENT BEHAVIORS

*At the end of this activity, each student should:*

- *--have become familiar with the distance of 3 1/2 feet, 5 feet, and 10 feet.*
- *--have participated in identifying parts of the camera.*
- *--have counted time in seconds.*
- *--have operated the camera in taking a picture.*
- *--have developed a picture.*

Students:

--respond by show of hands.

--respond, "Yes," "No," "Don't know."

--respond, "Yes," "No."

**MATERIALS**

**TEACHING STRATEGIES**

SEE IN ONE MINUTE AFTER THEY ARE TAKEN. THROUGHOUT THE YEAR YOU WILL BE USING IT TO TAKE PICTURES OF CLASS ACTIVITIES AND EACH OF YOU WILL HAVE A CHANCE TO OPERATE IT MANY TIMES.

At this point have students gather around the camera to get a closer look and examine it in order to become more familiar with it.

When students are seated once again, distribute Worksheet 0 of camera parts.

Show and tell about the parts of the camera while the students find them on Worksheet 0. Write the name of the part on the chalkboard as you discuss it. Have pupils say the name. Continue until you have mentioned all parts essential to their first effort.

Say:

> NOW THAT WE HAVE SEEN ALL THE PARTS OF THE CAMERA WHAT ELSE DO YOU THINK WE NEED TO KNOW IN ORDER TO WORK THE CAMERA WELL ENOUGH TO GET GOOD PICTURES?

> > If no one implies that it is important to know the distance of the object, then say:
> >
> > IN ORDER TO GET A CLEAR PICTURE WE MUST KNOW HOW FAR THE OBJECT IS FROM THE CAMERA, AND THEN ADJUST THE CAMERA TO TAKE A PICTURE.

Refer to Distance Scale on Lens Ring. Say:

> THIS IS THE PART THAT SHOWS WHICH DISTANCES THE CAMERA CAN ADJUST TO FOR CLEAR PICTURES. 3 1/2 FEET, 5 FEET, 10 FEET, ETC.

## CHING STRATEGIES

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## ANTICIPATED STUDENT BEHAVIORS

Students:

--look at camera.

--identify parts of camera on the worksheet.

--give varied responses.

## MATERIALS

## TEACHING STRATEGIES

Show a foot ruler. Ask students to identify it.

Say:

> LET'S MARK A DISTANCE THAT IS 3 1/2 FEET LONG
> ON THE FLOOR SO WE CAN TELL HOW FAR THAT
> DISTANCE IS WHEN WE'RE TAKING A PICTURE.

Select a volunteer to assist you in marking off the
distance with a foot ruler. Use a piece of masking
tape to mark the distance. Reiterate how the ruler i
placed end to end to get the distance.

Have students search around the room for objects that
approximately 3 1/2 feet long or that are a distance
3 1/2 feet away from the next object. Repeat this
procedure for 5 feet and 10 feet. Allow plenty of
time for students to associate one distance at a tim
with objects in the classroom.

While one-half of the class continues to familiarize
themselves with distances, organize the other half t
take turns looking through the view finder on the
camera to become acquainted with the black line and
red arrow inside. Allow them time to practice takin
pictures without shaking the camera (refer to positi
page 3 in the camera manual).

When everyone in this group has peered through the vi
finder and practiced holding the camera steady, swit
groups and provide the same experience for the other
of the class.

At a point when all pupils have tried the camera and
determined distances, refer to the camera Worksheet
once again -- this time the back view.

## CHING STRATEGIES

Ask students to identify it.

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## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond, "A ruler," "A stick," "I don't know."

--approximate distance and lengths of 3 1/2 feet, 5 feet, and 10 feet.

--look through the view finder.

--practice judging distance.

**MATERIALS**

**TEACHING STRATEGIES**

Say:

> WE ARE NOW READY TO PUT FILM IN THE CAMERA. (Identify and discuss only the parts the students need to use in loading the camera.)

Say:

> (Student's name), WOULD YOU LIKE TO HELP ME LOAD THE CAMERA?

Follow instructions on HOW TO LOAD FILM on pages 10 and 11 of the camera manual.

Have the student fit the film pack on the camera, close and lock the back.

Since pictures require a specific amount of time to develop, it will probably be necessary at this point to conduct a session on telling time by the second han

Say:

> AFTER A PICTURE IS TAKEN, THE FILM REQUIRES 60 SECONDS TO DEVELOP. LET'S SEE IF WE CAN GET AN IDEA OF HOW LONG THAT IS.

Direct the students' attention to the second hand on t clock, preferably a wall clock so that all may see at the same time. Point out the second hand and tell the to watch it go around the clock a few times.

Say:

> NOW WE ARE GOING TO COUNT THE AMOUNT OF TIME IT TAKES THE SECOND HAND TO GO FROM 12 BACK TO 12. I WILL TELL YOU WHEN TO START COUNTING.

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| | Students: |
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| , WOULD YOU LIKE TO HELP ME | --assist with loading the camera. |
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| the film pack on the camera,<br>ack. | |
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| attention to the second hand on the<br>wall clock so that all may see at<br>t out the second hand and tell them<br>d the clock a few times. | --observe second hand on clock. |
| G TO COUNT THE AMOUNT OF TIME<br>COND HAND TO GO FROM 12 BACK TO<br>L YOU WHEN TO START COUNTING. | |

| MATERIALS | TEACHING STRATEGIES |
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| | |

When the second hand approaches 12, signal the class t start counting the seconds softly. When the hand retu to 12 say:

> STOP. WHAT NUMBER WERE YOU SAYING WHEN I SAID STOP?

Then say:

> IT TOOK 60 SECONDS FOR THE HAND TO GO ALL AROUND THE CLOCK. IT ALSO TAKES 60 SECONDS FOR THE FILM TO DEVELOP. LET'S TRY COUNTING THE SECONDS AGAIN, THIS TIME GOING FROM 3 BACK TO 3.

Repeat the previous procedure.

Say:

> NOW WE ARE READY TO TAKE OUR FIRST PICTURE.

Arrange class for a group picture. When the picture i taken, pull film out of camera and have the class cour off the 60 seconds of developing time. Peel off the film.

Say:

> AS YOU PEEL OFF THE FILM FROM THE PICTURES YOU TAKE, BE CAREFUL OF A JELLYLIKE CHEMICAL ON THE FILM. IT IS IMPORTANT TO KEEP THIS JELLY AWAY FROM YOUR EYES AND MOUTH, AND ALSO AWAY FROM YOUR CLOTHES.

Demonstrate how to fold up the negative. Now proudly your product to the class.

Say:

## ING STRATEGIES

pproaches 12, signal the class to
onds softly. When the hand returns

R WERE YOU SAYING WHEN I SAID

S FOR THE HAND TO GO ALL
. IT ALSO TAKES 60 SECONDS
EVELOP. LET'S TRY COUNTING
, THIS TIME GOING FROM 3

ocedure.

TO TAKE OUR FIRST PICTURE.

oup picture. When the picture is
f camera and have the class count
developing time. Peel off the

HE FILM FROM THE PICTURES YOU
OF A JELLYLIKE CHEMICAL ON THE
RTANT TO KEEP THIS JELLY AWAY
D MOUTH, AND ALSO AWAY FROM YOUR

d up the negative. Now proudly show
ass.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond, "60," "I forgot."

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | NOW IT IS TIME FOR YOU TO TAKE A PICTURE.<br>Follow the developing procedures on pages 18 and 19 of the camera manual.<br>Say:<br>THE PICTURE YOU TAKE MAY INCLUDE EITHER ONE OR TWO CLASSMATES.<br>Organize the class for taking pictures. Assist studen only when absolutely necessary.<br>Let the picture taking continue until each student has an opportunity to take a picture. Let students choose the classmate whose picture he wishes to take.<br>Heap praise on students for any accomplishments. If a student's photo fails to turn out well, analyze the problem and allow him to try again.<br>Mention use of flash cubes at the time needed.<br>As students succeed in taking a good picture give them gummed label to stick on the back. Each label should include the teacher's name, date, who is in the pictur and what the picture is about. In the comments sectio identify who took the picture. Make clear that it is photographer's responsibility to see that every pictur takes is labeled. (He may need to get assistance from you or a classmate.) |

## EACHING STRATEGIES

ME FOR YOU TO TAKE A PICTURE.

ping procedures on pages 18 and 19 of
.

YOU TAKE MAY INCLUDE EITHER ONE
MATES.

s for taking pictures. Assist students
ely necessary.

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ure is about. In the comments section
the picture. Make clear that it is the
sponsibility to see that every picture he
. (He may need to get assistance from
e.)

## ANTICIPATED STUDENT BEHAVIORS

Students:

--take pictures of classmates.

Me and my Environment

# UNIT II. ME AS A HABITAT

## UNIT II OVERVIEW

The content focus of ME AS A HABITAT has direct application to daily living, personal body care, and successful job holding for the student in later life. Follow-up studies conducted on the adult mentally handicapped have revealed that the handicapped worker often loses his job due to a lack of personal hygiene. Body cleanliness has been thus singled out as a serious problem. This unit gives the student a direct experience with the microscopic world that is the major cause of his problem, body odors. The growing of microbes from his body and the application of cleansing agents to the cultured microbes give the student a concrete experience to witness. This first-hand experience lets him realize his body is a habitat for odor producing microbes.

These experiences with microbes also have direct application to the world of work. By reviewing the occupational classifications we soon realize that most of the mildly EMH people in such nonskilled or routine jobs are employed as sanitation workers, hospital aids, food service employees, or maintenance custodians. The successful performance of these jobs depends upon a knowledge and understanding of microorganisms.

The mentally handicapped do experience sexual contacts. The core of activities, Diseases In People Habitats, takes a serious look at V. D. Discussions center on the contraction and effects of V. D., as well as what to do in the event one is infected.

Many of the educable handicapped will eventually maintain homes. Cleanliness of one's immediate environment as well as the proper care of food is explored. Some dynamic experiences demonstrate the effect of heat and refrigeration on microbes.

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the students.

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UNIT II. ME AS A HABITAT

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## UNIT II RATIONALE

This unit perhaps more than any other can directly serve the needs of the students.

There is hardly an aspect of our daily existence that is not directly or indirectly affected by the growth of microscopic plants and animals. While several terms are used in reference to these microscopic forms, the term microbe is most preferred and used by scientists today. Microbes, as defined in this set of materials, include bacteria, yeasts, molds, algae, viruses, and protozoa -- any organism that cannot normally or easily be seen with the unaided eye. Students from past experience may be aware of one or more of these categories. While they may be recognized as specific microbes by some of the students, the teacher is encouraged to use the term microbe throughout this program.

Me and my Environment

UNIT II. ME AS A HABITAT

CORE A. MICROBES AND ME

AIMS FOR ME AND MY ENVIRONMENT

1. DEVELOPMENT IN EACH CHILD OF A SENSE OF IDENTITY AS A PERSON WHO HAS SOME DEGREE OF CONTROL OVER AND CAN ACT ON HIS ENVIRONMENT. This will lead to a degree of self-determination based on a rational coping with situations rather than on a passive compliance or an impulsive response to problems.
2. DEVELOPMENT IN EACH CHILD OF A SUCCESS SYNDROME. More than anything else, each activity is intended to be a success experience for each child. It is the teacher's responsibility -- almost obligation -- to see that each child succeeds at a level that is challenging to his abilities and that preserves his self-respect. It is a further responsibility of the teacher to point out his achievement. The students as a group should help each individual fit what he has done into a pattern of accomplishment.
3. DEVELOPMENT IN EACH CHILD OF AN INTEREST THAT COULD BECOME A HOBBY OR AVOCATION OVER A LIFETIME (through an exposure to an array of experiences in science). It is hoped that many children will find some area -- perhaps growing plants, caring for animals, identifying flowers, collecting things, or simply enjoying outings into the country -- that they feel strongly about and can develop some competence or knowledge in. This would provide a means of self-expression, and (perhaps) allow some degree of sharing or involvement with others.
4. DEVELOPMENT IN EACH CHILD OF A SENSE OF RELATIONSHIP AND EMPATHY WITH OTHER LIVING THINGS. It is hoped that this will lead to a positive regard and caring about what affects them as individuals and as a group, because what affects them affects the community of man.
5. DEVELOPMENT IN EACH CHILD OF AN UNDERSTANDING OF ENVIRONMENTAL CONDITIONS that will lead to a sense of responsibility for the environment and actions that protect or improve it.

1. Recognize the world of micr
2. Understand that the human b
   factors in the environment.
3. Comprehend the effects of c
   alcohol, and smoking) and s
4. Realize that he has some co
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1. Realize that many living co
   the unaided eye.
2. Realize that people are hab
3. Appreciate that microbes ar
4. Understand the need for cle

## UNIT II. ME AS A HABITAT

## CORE A. MICROBES AND ME

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### UNIT II GOALS

1. Recognize the world of microbes as a part of the world of living things.
2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.
3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.
4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

### OBJECTIVES OF CORE A

1. Realize that many living components of the environment are too small to be seen with the unaided eye.
2. Realize that people are habitats for microbes.
3. Appreciate that microbes are present everywhere.
4. Understand the need for cleanliness.

## CORE A RATIONALE

As a functioning member of the environment, man is surrounded by a tremendous variety of living things in his everyday activities. He is more or less aware of the visible plants and animals, and while these visible forms have a significant influence on mankind, the impact of the microscopic organisms is at least as great. In no environment where higher organisms are present are the microscopic forms absent. Because these tiny organisms are usually invisible, however, the influence they have or can have on our life is for the most part unrecognized. The harmful effects may be both dramatic and tragic. The beneficial aspects of the existence of these microorganisms is equally dramatic, so much so that continued life on earth without these organisms would be impossible. The purpose of this core is to open the door for the student to this unseen world of living things which are all about us. It would not be incorrect to say that each person is able to live a safer and richer life if he knows something of the microscopic life in our environment and is able to apply that knowledge intelligently in his everyday living.

That microbes exist, and that the student himself serves as a habitat for these forms of life, is the purpose of Activity 2-1 (Microbes On Me). The student is introduced to the basic technique by which scientists grow microbes in the laboratory for study purposes. The idea that the human body is a habitat for microbes is expanded in Activity 2-2 (I'm A Habitat) when the student collects and cultures microbes from various parts of his body. In Activity 2-3 (Seeing Is Believing) he has the opportunity to observe and record by sketching the microbes he has grown.

In Activity 2-4 (Keep It Clean) the effectiveness of several cleansing products is investigated. The students again collect and culture microbes from various parts of the body, but this

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Activity 2-1 (M
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one shark or another

Lichens are rea
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UNIT II. ME AS A HABITAT

CORE A. MICROBES AND ME

BSCS

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## BACKGROUND INFORMATION FOR THE TEACHER

Activity 2-1 (Microbes On Me) establishes the fact that living things living on other living things is common in the natural world. The slide of the shark and remora fish, while not an example familar to most students, shows a normal relationship where one animal lives on another. This is a rather casual association whereby the shark sucker, or remora, benefits without causing apparent injury. The remora attaches itself to the shark by means of a sucker on its head and is pulled along wherever the shark goes. The remora is not parasitic on the shark. When the shark is feeding, the remora loses its hold and scavenges around on its own, returning to one shark or another when the meal is over.

Lichens are really two kinds of organisms, algae and fungi, living together. As pictured on the slide shown, the lichens are attached to a tree. They also will be found growing on rocks, boards, stumps, etc. Like the remora, lichens do no apparent harm to the trees or whatever else upon which they live. A flea on a dog is a more familar example of one animal living upon another. In this case, however, the relationship is harmful to the dog as the flea feeds on the dog's blood. A similar example would be a wood tick.

Several of the activities, beginning with Activity 2-1 (Microbes on Me), require the preparation of a proper food or growth medium upon which the microbes can be grown. A culture medium is to the microbes what soil is to plants. The solid media used most commonly is prepared by adding a solidifying substance such as agar to water in a flat, round glass or plastic container called a petri dish. Agar is a gelatin-like substance derived from a red algae. When commercially prepared other nutrients are often added which provide the microbes with an ideal environment for growing. On this medium, the organisms grow in clumps, each originating from a single organism or small group of organisms.

In order to obtain pure or desired cultures in an environment where microbes abound, the medium and equipment used must be freed of unwanted

## CORE A RATIONALE (continued)

time add several commercially available products, advertised as "germ killers," to the cultures to test their effectiveness. This activity is designed to demonstrate that the microbe population on a person's body can be effectively controlled by maintaining body cleanliness through the use of soap and water. Correct knowledge affords protection against both the microbes and unnecessary fear of them.

Due to their small size the existence of microbes in an area may be unsuspected. Because they are so closely coupled to their environment, the habitat must always be taken into account. In Activity 2-5 (Microbes Are Everywhere) the students are able to speculate on where in their school environment microbes might be most abundant. They then proceed to collect and culture microorganisms from selected areas in and around the school.

In Activity 2-6 (Drinking Microbes) the students continue to discover the presence of unseen living things in their environment by collecting water samples from a variety of sources in the neighborhood. By adding the samples to bread the students are introduced to molds as microbes and are impressed by the fact that water is an excellent source for these microbes. The point is stressed that some of these microbes may be harmful and therefore a pure source of drinking water must be maintained.

Microbes are very common in the air. Activity 2-7 (Skydiving Microbes) makes this apparent through a slide sequence and demonstration whereby the student observes a culture becoming contaminated when microbes in the air fall directly on the culture medium. The activity also reinforces the concept that boiling is an effective means by which microbes may be controlled or prevented from growing.

BACK

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BACKGROUND INFORMATION FOR THE TEACHER (continued)

organisms. This is done by sterilizing the dish and media to kill the unwanted microbes before inoculating or touching the media with the microbes to be cultured. Since it is not possible to supply sterilizing apparatus, the cultures the students will be working with will exhibit some degree of contamination no matter how carefully they work. Simply explain to the students that because microbes are everywhere it is impossible to avoid them completely without more expensive equipment.

Microbes may be found practically everywhere. Soil contains huge numbers of bacteria, yeasts, and molds. The richer the soil, the more microorganisms. Most are beneficial, aiding in fertilization. Some of these may be found by the student in Activity 2-5 (Microbes Are Everywhere) when collecting is done on the school ground.

Water, regardless of its source, contains microbes. This is developed in Activity 2-6 (Drinking Microbes). The majority of these enter the water when it runs over or through the ground. Ponds, lakes, and streams have a fairly high population. Some will be found in the near-boiling water of hot springs; others prefer the cold glacial streams. The majority, however, prefer temperatures between these extremes. In fact, body temperature or a little above, seems most desirable. For this reason, some sort of incubator must be used in Activity 2-2 (I'm A Habitat) to help in achieving maximum growth in a minimum of time. Conversely, lowering the temperature tends to retard growth. For this reason food is refrigerated to inhibit microbe growth that would otherwise spoil the food or cause disease.

The body's surface is home to many varieties of bacteria (Activities 2-1 and 2-2). Some of these may be harmful, particularly if they gain entrance into body tissues by way of a wound. In addition, the nose, mouth, throat, urogenital tract, and digestive tract are always inhabited by a variety of microbes. Most of these are harmless and their occurrence

## CORE A RATIONALE (continued)

The last Activity, 2-8 (Review Of Success), should serve in a two-fold manner. Its primary service can be to assist you in determining whether to proceed to the next core or to reiterate aspects developed in this one. A secondary service can be to enhance the development of the success syndrome in your students.

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BACKGROUND INFORMATION FOR THE TEACHER (continued)

is normal. At times, however, pathogenic microbes may take up residence and produce disease as they multiply.

Since microbes are carried by dust particles, any object on which dust may settle will have microbes on it. (Activity 2-7 -- Skydiving Microbes). The microbes by themselves are not capable of locomotion, but are easily transported by air currents. Since most foods we eat are heated at some time during their preparation, few microbes are likely to be present. However, even cooked foods left in the open air will become contaminated since dust particles containing microbes may land on the food. Again, most of these microbes are harmless, but occasionally harmful ones may make their appearance.

**Me and my Environment**

UNIT II
CORE A

# PLANNING GUIDE

NOTE: Some activities (*indicated in italics and an* ❧ *in the* be prepared several days or weeks in advance. Use thi a teaching and preparation schedule. All supplies nee

| Activity Number, Page, Tentative Teaching Date | Check List of Supplies Needed | | |
|---|---|---|---|
| | Materials You Furnish | Materials in Supply Kit | (*Italics a* |
| 2-1. Microbes On Me | Water | | At least one |
| | Masking tape | | Enough for la |
| | Container (pan) | | To boil water |
| Page ______ | Glass plate or cover for container | | |
| Date planned ______ | 35mm Slide projector | | |
| | | Hot plate | Use stove if |
| | | Nutrient agar | Two tablespoo |
| | | Sterile plastic petri dishes | Three per stu |
| | | 100 ml Beakers | One per stude |
| | | Glass stirring rod | One |
| | | Slide 2-1 | Remora On Sh |
| | | Slide 2-2 | Lichen On A T |
| | | Slide 2-3 | Dog |
| | | Slide 2-4 | Flea On Dog |
| | | Slide 2-5 | Man |
| 2-2. I'm A Habitat | Cardboard box | | *Approximatel incubator* |
| | Yardstick | | |
| Page ______ | 100 Watt bulb | | |
| Date planned ______ | Extension cord with a socket | | |
| | Aluminum foil | | Several feet |
| | Masking tape | | For labeling |
| | Sand | | One teaspoon |
| | | Thermometer, F° | One |
| | | Sterile plastic petri dishes | Three per stu |

## PLANNING GUIDE

*(indicated in italics and an* ↙ *in the margin)* must
ral days or weeks in advance. Use this summary as
reparation schedule. All supplies needed are listed.

BSCS

| es Needed<br>erials in Supply Kit | Notes and Suggestions to Teacher *(Italics and Arrow Indicate Advance Preparation Directions)* |
|---|---|
| | At least one quart |
| | Enough for labeling |
| | To boil water in |
| late | Use stove if you have one |
| ent agar | Two tablespoons full |
| le plastic petri hes | Three per student |
| l Beakers | One per student |
| stirring rod | One |
| 2-1 | Remora On Shark |
| 2-2 | Lichen On A Tree |
| 2-3 | Dog |
| 2-4 | Flea On Dog |
| 2-5 | Man |
| | *Approximately 10" X 12" X 18" for construction of a microbe incubator* ↙ |
| | Several feet |
| | For labeling |
| | One teaspoon |
| ometer, F° | One |
| ile plastic petri hes | Three per student |

**Me and my Environment**

UNIT II
CORE A

# PLANNING GUIDE

NOTE: Some activities (*indicated in italics and an* be prepared several days or weeks in advance. a teaching and preparation schedule. All supp

| Activity Number, Page, Tentative Teaching Date | Check List of Supplies Needed | | |
|---|---|---|---|
| | Materials You Furnish | Materials in Supply Kit | (I |
| 2-2. I'm A Habitat (continued) | Film - *Life In A Drop Of Water*<br>Coronet Films | Q-tips<br>Clinical thermometer<br>Alcohol (isopropyl)<br>Test tubes (18 X 150 mm)<br>Magnifiers | Thre<br>One<br>Smal<br>Two<br>One<br>*For* |
| 2-3. Seeing Is Believing<br><br>Page ______<br>Date planned ______ | Colored pencils | Worksheet 2-1 | Part<br>Vari |
| 2-4. Keep It Clean<br><br>Page ______<br>Date planned ______ | Pan or container<br>Tongs<br>Water<br>Masking tape<br>Mouthwash<br>Deodorant<br>Lysol (or disinfectant)<br>Soapy water solutions<br><br>Other cleansing products<br>35mm Slide projector | | For<br>For<br>One<br>For<br>One<br>One<br><br>Sever<br>lau |

## PLANNING GUIDE

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and preparation schedule. All supplies needed are listed.

BSCS

| upplies Needed | Notes and Suggestions to Teacher<br>(*Italics and Arrow Indicate Advance Preparation Directions*) |
|---|---|
| Materials in Supply Kit | |
| Q-tips | Three per student |
| Clinical thermometer | One |
| Alcohol (isopropyl) | Small amount for cotton swab |
| Test tubes (18 X 150 mm) | Two |
| Magnifiers | One per student |
| | ➘ *For suggested extension to the activity.* |
| Worksheet 2-1 | Partially completed |
| | Variety of colors |
| | For boiling water |
| | For handling dishes |
| | One quart |
| | For labeling |
| | One bottle |
| | One |
| | Several - made from various brands of hand, dish, and laundry detergents. |

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Me and my Environment

UNIT II
CORE A

## PLANNING GUIDE

NOTE: Some activities (*indicated in italics and an*
be prepared several days or weeks in advance.
a teaching and preparation schedule. All supp

| Activity Number, Page, Tentative Teaching Date | Check List of Supplies Needed | | (I |
|---|---|---|---|
| | Materials You Furnish | Materials in Supply Kit | |
| 2-4. Keep It Clean (continued) | | Nutrient agar | Two t |
| | | Hot plate | One |
| | | Sterile petri dishes | Thre |
| | | 100 ml Beakers | One p |
| | | Glass stirring rod | One |
| | | Worksheet 2-1 | Parti |
| | | Petri dishes inoculated in Activity 2-3 | |
| | | Sterile Q-tips | Two p |
| | | Formaldehyde (Formalin) | One c |
| | Container for soap and water | | |
| | | Worksheet 2-2 | Micr |
| | | Slide 2-7 | Work |
| 2-5. Microbes Are Everywhere | Water | | One c |
| | Masking tape | | For |
| | Incubator box | | Prev |
| | Container or pot | | For |
| Page ______ | | Hot plate | One |
| Date planned ______ | | Nutrient agar | Two t |
| | | Sterile petri dishes | Thre |
| | | 100 ml Beakers | One p |
| | | Glass stirring rod | One |
| | | Sterile Q-tips | Thre |

# PLANNING GUIDE

vities (*indicated in italics and an* ↙ *in the margin*) must
ed several days or weeks in advance. Use this summary as
g and preparation schedule. All supplies needed are listed.

BSCS

| upplies Needed | Notes and Suggestions to Teacher |
|---|---|
| Materials in Supply Kit | (*Italics and Arrow Indicate Advance Preparation Directions*) |
| Nutrient agar | Two tablespoons |
| Hot plate | One |
| Sterile petri dishes | Three per student |
| 100 ml Beakers | One per student |
| Glass stirring rod | One |
| Worksheet 2-1 | Partially completed |
| Petri dishes inoculated in Activity 2-3 | |
| Sterile Q-tips | Two per student |
| Formaldehyde (Formalin) | One quart |
| Worksheet 2-2 | Microbe Fighters |
| Slide 2-7 | Worksheet 2-2 |
| | One quart - boiling |
| | For labeling |
| | Previously constructed |
| | For boiling water |
| Hot plate | One |
| Nutrient agar | Two tablespoons |
| Sterile petri dishes | Three per student |
| 100 ml Beakers | One per student |
| Glass stirring rod | One |
| Sterile Q-tips | Three per student |

**Me and my Environment**

UNIT II
CORE A

# PLANNING GUIDE

NOTE: Some activities (*indicated in italics and an* ➹ *in* be prepared several days or weeks in advance. Use a teaching and preparation schedule. All supplies

| Activity Number, Page, Tentative Teaching Date | Check List of Supplies Needed | | (*Italics* |
|---|---|---|---|
| | Materials You Furnish | Materials in Supply Kit | |
| 2-6. Drinking Microbes | Baby food jars or milk cartons | | *Two per st* |
| | Saran Wrap | | *To cover* |
| | Bread | | *Five or s* |
| Page ______ | Masking tape | | For labeli |
| Date planned ______ | Incubator box | | Previously |
| | Water | | Supply of |
| | Water | | Collected |
| | | Medicine droppers | One per st |
| 2-7. Skydiving Microbes | 35mm Slide projector | | |
| | Glycerine or soap | | |
| | | Erlenmeyer flasks (250 ml) | Two |
| | | Rubber safety stoppers | #8 to fit |
| Page ______ | | Straight glass tubing | Eight inch |
| Date planned ______ | | S-shaped glass tubing | One |
| | | Glass beads | To slide d |
| | | Slide 2-8 | Experiment |
| | | Slide 2-9 | 24 hours l |
| | | Slide 2-10 | Experiment |
| | | Slide 2-11 | 24 hours l |

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## PLANNING GUIDE

vities (*indicated in italics and an* ⬉ *in the margin*) must
ed several days or weeks in advance. Use this summary as
g and preparation schedule. All supplies needed are listed.

BSCS

| upplies Needed | Notes and Suggestions to Teacher (*Italics and Arrow Indicate Advance Preparation Directions*) |
|---|---|
| Materials in Supply Kit | |
| | *Two per student* |
| | |
| | *To cover jars* |
| | *Five or six slices* |
| | For labeling |
| | Previously constructed |
| | Supply of |
| | Collected by students from various sources |
| Medicine droppers | One per student |
| Erlenmeyer flasks (250 ml) | Two |
| Rubber safety stoppers | #8 to fit flasks |
| Straight glass tubing | Eight inch piece |
| S-shaped glass tubing | One |
| Glass beads | To slide down S-shaped tubing |
| Slide 2-8 | Experiment 1 - Setup |
| Slide 2-9 | 24 hours later - Results |
| Slide 2-10 | Experiment 2 - Setup |
| Slide 2-11 | 24 hours later - Results |

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**Me and my Environment**

UNIT II
CORE A

# PLANNING GUIDE

NOTE: Some activities (*indicated in italics and an* 
be prepared several days or weeks in advance.
a teaching and preparation schedule. All suppl

| Activity Number, Page, Tentative Teaching Date | Check List of Supplies Needed | | (*It* |
|---|---|---|---|
| | Materials You Furnish | Materials in Supply Kit | |
| 2-8. Review Of Success | Butcher paper | | Piece |
| | Magazines | | *Large* |
| | Scissors | | One p |
| | Colored pencils | | Sever |
| Page ______ | Paste or glue | | Class |
| Date planned ______ | 35mm Slide projector | | |
| | | Worksheet 2-3 | Revie |
| | | Slide 2-12 | Revie |
| | | Slide 2-13 | Revie |

## PLANNING GUIDE

ties *(indicated in italics and an* ⬋ *in the margin)* must
several days or weeks in advance. Use this summary as
and preparation schedule. All supplies needed are listed.

BSCS

| pplies Needed | Notes and Suggestions to Teacher |
|---|---|
| Materials in Supply Kit | *(Italics and Arrow Indicate Advance Preparation Directions)* |
| | Piece per student |
| | *Large variety* |
| | One pair per student |
| | Several for each student |
| | Class supply |
| orksheet 2-3 | Review of Success |
| lide 2-12 | Review of Success Question 1 |
| lide 2-13 | Review of Success Question 2 |

Me and my Environment

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

1. Recognize the world of microbes as a part of the world of living things.

CORE A OBJECTIVES:

1. Realize that many living components of the environment are too small to be seen with the unaided eye.
2. Realize that people are habitats for microbes.

## MATERIALS

*1 Quart water (1000 ml)
Hot plate or stove
*Masking tape
*Container to boil water
*Glass plate
2 Tablespoons nutrient agar
3 Sterile petri dishes per student
1 Beaker (100 ml) per student

(Continued on next page)

*Not furnished in materials kit

## TEACHING STRATEGIES

Activity 2-1. Microbes On Me

*In Unit I the students were introduced to the term habitat as "a place where something lives." In this activity, through a series of slides, students will discover that animals and plants can be habitats for other animals and plants, and ultimately that man himself can be a habitat.*

Teacher Preparation:

1. Before class begins have supplies set out on a table ready for student use.
2. Begin to heat the water before class so it will be boiling when you are ready for it later in the activity.
3. Sterile petri dishes must be used. The dishes will remain sterile as long as the plastic bag has not been opened. Once it has, the cover of the dish must not be removed, even momentarily, until the agar is poured.

FOR THIS ACTIVITY

:

ecognize the world of microbes as a part f the world of living things.

JECTIVES:

ealize that many living components of the nvironment are too small to be seen with he unaided eye.

ealize that people are habitats for icrobes.

## TEACHING STRATEGIES

Microbes On Me

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UNIT II. ME AS A HABITAT

CORE A. MICROBES AND ME

ACTIVITY 2-1. MICROBES ON ME

BSCS

## ANTICIPATED STUDENT BEHAVIORS

*At the end of this activity, each student should:*

*--have identified man as a possible habitat for living things.*
*--have observed the preparation of agar.*
*--have touched the agar and sealed the dish.*

ACTIVITY 2-1

⑧

## MATERIALS

Glass stirring rod
Slides 2-1 through 2-5
*35mm Slide projector

Slide 2-1

*Not furnished in materials kit

## TEACHING STRATEGIES

Begin the activity by projecting Slide 2-1 and asking:

> WHAT DO YOU SEE?

Describe the slide saying:

> WHAT YOU SEE IS A SHARK WITH A REMORA FISH ATTACHED. THE REMORA FISH LIVES ATTACHED TO THE SHARK. IT'S JUST ALONG FOR THE RIDE -- TO GET SOME FREE FOOD. IT DOES NOT EAT THE SHARK, BUT ATTACHES ITSELF TO THE SHARK BY MEANS OF A SUCKER ON ITS HEAD. THE SUCKER IS LIKE THOSE ON THE ARM OF AN OCTOPUS. THE REMORA RIDES ALONG WHEREVER THE SHARK GOES. WHEN THE SHARK KILLS ANOTHER FISH, THE REMORA EATS LEFTOVERS.

Then say:

> THIS IS AN EXAMPLE OF HOW ONE LIVING THING CAN LIVE ON ANOTHER LIVING THING. THE SHARK AND THE WATER AROUND SHARKS IS THE PLACE WHERE THE REMORA FISH LIVES. WE HAVE LEARNED A WORD IN ONE OF OUR EARLIER ACTIVITIES THAT MEANS A PLACE WHERE SOMETHING LIVES. CAN ANYONE REMEMBER WHAT THAT WORD IS?

If students do not readily recall the term habitat, write "habitat" on the chalkboard and say:

> AN ANIMAL'S HABITAT IS THE PLACE WHERE IT LIVES. FOR EXAMPLE, THE FOREST IS A DEER'S HABITAT BECAUSE THE FOREST IS WHERE THE DEER LIVES. WE HAVE SOME HABITATS IN THIS ROOM. WHAT ARE THEY?

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| ity by projecting Slide 2-1 and asking:<br>U SEE? | --describe the slide by replying, "Fish," "A fish on a shark." |
| ide saying:<br>EE IS A SHARK WITH A REMORA FISH THE REMORA FISH LIVES ATTACHED RK. IT'S JUST ALONG FOR THE RIDE -- E FREE FOOD. IT DOES NOT EAT THE ATTACHES ITSELF TO THE SHARK BY SUCKER ON ITS HEAD. THE SUCKER IS ON THE ARM OF AN OCTOPUS. THE ES ALONG WHEREVER THE SHARK GOES. HARK KILLS ANOTHER FISH, THE REMORA VERS. | |
| EXAMPLE OF HOW ONE LIVING THING N ANOTHER LIVING THING. THE SHARK TER AROUND SHARKS IS THE PLACE WHERE FISH LIVES. WE HAVE LEARNED A WORD OUR EARLIER ACTIVITIES THAT MEANS A E SOMETHING LIVES. CAN ANYONE HAT THAT WORD IS? | --recall the word habitat. |
| not readily recall the term habitat, on the chalkboard and say:<br>S HABITAT IS THE PLACE WHERE IT LIVES. E, THE FOREST IS A DEER'S HABITAT E FOREST IS WHERE THE DEER LIVES. WE HABITATS IN THIS ROOM. WHAT ARE THEY? | --describe the habitats in the room: that of the pet, pond, plant. |

## MATERIALS

Slide 2-2

Slide 2-3

## TEACHING STRATEGIES

Project Slide 2-2 and ask:

WHAT DO YOU SEE?

THE PICTURE SHOWS TWO LIVING THINGS, THE TREE THE GREEN PATCHES GROWING ON THE TREE. THE GR PATCHES LIVING ON THE TREE ARE CALLED LICHENS (lī´ kenz). THIS IS ANOTHER EXAMPLE OF ONE LI THING THAT LIVES ON ANOTHER. IS THE TREE A HABITAT?

WHY?

CAN YOU THINK OF ANY OTHER EXAMPLES OF ONE THING LIVING ON ANOTHER?

Project Slide 2-3 and ask:

WHAT DO YOU SEE?

IS THIS DOG A HABITAT?

Project Slide 2-4 and ask:

WHAT IS LIVING ON THE DOG?

If students do not recognize the flea in the pictur

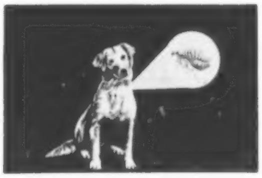
THIS IS A FLEA. FLEAS LIVE ON DOGS AND CATS AND OTHER FURRY ANIMALS.

Again project Slide 2-3 and ask:

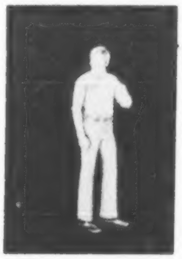
WHY IS THE DOG A HABITAT?

| CHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| d ask: | |
| ? | --describe the slide by replying, "A tree with some stuff on it," "An old rotten tree." |
| WS TWO LIVING THINGS, THE TREE AND ES GROWING ON THE TREE. THE GREEN ON THE TREE ARE CALLED LICHENS IS IS ANOTHER EXAMPLE OF ONE LIVING S ON ANOTHER. IS THE TREE A | |
| | --respond, "Yes." |
| | --respond, "Because the green stuff is living on it," "Because something is living on it." |
| F ANY OTHER EXAMPLES OF ONE ANOTHER? | --probably will not be able to think of any. |
| d ask: | |
| ? | --identify a dog. |
| ABITAT? | --reply, "Yes," "No," "I don't know," "Maybe." |
| d ask: | |
| ON THE DOG? | --reply, "Flea," "Bug," "I don't know." |
| ecognize the flea in the picture, say: | |
| FLEAS LIVE ON DOGS AND CATS ANIMALS. | |
| 2-3 and ask: | |
| HABITAT? | --reply, "Because fleas live on it." |

**MATERIALS**



Slide 2-5



**TEACHING STRATEGIES**

Project Slide 2-5 and ask:

IS THIS LIVING THING A HABITAT?

If students do not readily agree that man is a habitat, ask:

ARE THERE ANY LIVING THINGS THAT LIVE ON MAN?

NOTE: To capitalize on the element of surprise when the students find microbe colonies growing where they touched their agar, microbes are not identified as "living things that live on man." Instead, thi question is left open and preparations are made without explaining that these materials will be used to grow microbes. Be sure to refer back to this later on.

IS THERE ANY WAY TO FIND OUT?

ALL RIGHT, WE ARE GOING TO TRY TO FIND OUT. BUT FIRST, WHAT DO YOU THINK LIVING THINGS NEED IN ORDER TO GROW?

If students do not suggest food, ask:

WHAT DO YOU NEED IN ORDER TO GROW?

THEN WHAT DO YOU THINK OTHER LIVING THINGS NEED IN ORDER TO GROW?

Hold up a petri dish.

IN THE LABORATORY SCIENTISTS USE THESE COVERED DISHES TO GROW CERTAIN LIVING THINGS. THESE DISHES ARE CALLED PETRI DISHES. DO NOT OPEN THEM.

Write "petri dish" on the chalkboard.

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| 2-5 and ask: | |
| IVING THING A HABITAT? | --reply, "Yes," "No," "Maybe." |
| not readily agree that man is a habitat, | |
| ANY LIVING THINGS THAT LIVE ON MAN? | --will probably respond, "No." |
| talize on the element of surprise when the s find microbe colonies growing where they their agar, microbes are not identified ing things that live on man." Instead, this n is left open and preparations are made explaining that these materials will be grow microbes. Be sure to refer back to ter on. | |
| NY WAY TO FIND OUT? | --may or may not suggest ways. |
| , WE ARE GOING TO TRY TO FIND OUT. , WHAT DO YOU THINK LIVING THINGS RDER TO GROW? | --recall general life requirements and respond, "Food," "Water," "Air," "I don't know." |
| not suggest food, ask: | |
| U NEED IN ORDER TO GROW? | --respond, "Food." |
| DO YOU THINK OTHER LIVING THINGS RDER TO GROW? | --respond, "Food." |
| dish. | |
| BORATORY SCIENTISTS USE THESE COVERED GROW CERTAIN LIVING THINGS. THESE CALLED PETRI DISHES. DO NOT OPEN THEM. | |
| sh" on the chalkboard. | |

| MATERIALS | TEACHING STRATEGIES |
|---|---|

Write "agar" on the chalkboard.

SCIENTISTS GROW THESE LIVING THINGS ON AGAR. AGAR IS A SPECIAL KIND OF MATERIAL THAT LOOKS AND FEELS LIKE JELLO. AGAR IS USED TO GROW THINGS.

DOES ANYONE KNOW HOW TO MAKE JELLO?

If someone knows how to make jello, give him a chance to explain the procedure to the class. Students will probably point out that you add jello to hot water and when it cools, it hardens. If they do not relate this, then an explanation is necessary about the procedure for making jello.

Have the students observe as you make agar solution. Add two tablespoons of nutrient agar to one quart of boiling water. Add the agar slowly to prevent lumping.

CAUTION: Stir the agar continuously since it burns easily in the bottom of the pan.

As soon as the agar is dissolved, remove the container from the heat source, for it will easily boil over. Cover the container with a glass plate to keep out microbes.

While the container of agar is cooling, give each student three pieces of masking tape. Direct the students to write their names in small, neat letters on the three pieces of masking tape.

Have selected students distribute three petri dishes and one 100 ml beaker to each student. Before distribution of the dishes, say:

## TEACHING STRATEGIES

the chalkboard.

GROW THESE LIVING THINGS ON AGAR.
PECIAL KIND OF MATERIAL THAT LOOKS
IKE JELLO. AGAR IS USED TO GROW

KNOW HOW TO MAKE JELLO?

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masking tape. Direct the students to
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g tape.

udents distribute three petri dishes and
r to each student. Before distribution
ay:

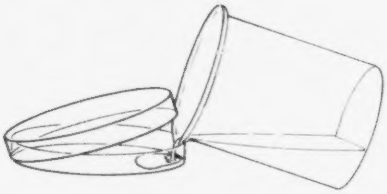
## ANTICIPATED STUDENT BEHAVIORS

Students:

--give varying responses depending upon their
previous experiences.

**MATERIALS**

Diagram 2-1



**TEACHING STRATEGIES**

DO NOT OPEN THE DISHES.

WHEN YOU GET YOUR DISHES, STICK ONE OF THE PIECES OF TAPE WITH YOUR NAME ON IT ON THE BOTTOM OF EACH DISH.

Dispense 50 ml of the agar solution to each student. (Fill each beaker half full.) While allowing the agar cool slightly, demonstrate how to pour the agar into th petri dish. See Diagram 2-1. Pour the agar into the d by raising the cover of the dish very slightly.

Say:

WHEN YOU POUR THE LIQUID IN THE PETRI DISH, RAISE THE LID ONLY ENOUGH TO POUR. CLOSE THE LID AS SOON AS YOU HAVE ENOUGH AGAR TO COVER THE BOTTOM.

This technique is used to prevent airborne microbes fro entering the petri dish. To maintain the element of surprise, the significance of this technique need not b mentioned now. In later activities you should explain why agar is poured this way.

Say:

REMEMBER, POUR IN ONLY ENOUGH TO COVER THE BOTTOM OF EACH DISH.

Make sure the dishes are level when the agar is put in. The cover should remain on the dish until the agar hard The agar will take about 15 minutes to harden.

Have the students pour their own agar. While the agar hardens you might want students away from their work ar This would be a good time to visit and observe the clas pets and develop further the concept of habitats.

## STRATEGIES

ES.

SHES, STICK ONE OF THE
OUR NAME ON IT ON THE

r solution to each student.
ll.) While allowing the agar to
how to pour the agar into the
-1. Pour the agar into the dish
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QUID IN THE PETRI DISH,
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eir own agar. While the agar
udents away from their work areas.
to visit and observe the class
the concept of habitats.

## ANTICIPATED STUDENT BEHAVIORS

Students:

## MATERIALS

## TEACHING STRATEGIES

15 MIN

When 15 minutes have passed, test the agar to see if it is ready by carefully tilting the dish you used to demonstrate pouring the agar. If the agar does not move or slip, it is ready to use. At this point, say:

> IF YOU'RE VERY CAREFUL YOU MAY TOUCH THE AGAR TO SEE WHAT IT FEELS LIKE. LIFT THE COVER OFF OF ONE DISH JUST A LITTLE BIT AND QUICKLY TOUCH THE AGAR LIGHTLY.
>
> MOVE YOUR FINGER ACROSS THE SURFACE OF THE AGAR AND COVER THE DISH AGAIN. BE CAREFUL NOT TO PUSH THE AGAR AROUND IN THE DISH OR DIG IT UP. TOUCH THE AGAR IN ONLY ONE DISH. NOW TAPE THIS DISH SHUT AND MARK A "T" ON THE TAPE. I WILL COLLECT IT.

Collect the dishes the students touched. Store these dishes in a warm dark place. After the touched dishes are collected, have the students tape the other dishes closed. Collect the untouched dishes and store them in a refrigerator upside down to prevent condensation of moisture on the lid.

Say:

> TOMORROW WE'LL USE THESE DISHES TO ANSWER THESE QUESTIONS.

Write the following two questions on the chalkboard.

> DO LIVING THINGS LIVE ON MAN?
>
> AM I A HABITAT?

## ACHING STRATEGIES

## ANTICIPATED STUDENT BEHAVIORS

15 MINUTES

ve passed, test the agar to see if it is
tilting the dish you used to demon-
agar. If the agar does not move or
to use. At this point, say:

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SH JUST A LITTLE BIT AND QUICKLY
R LIGHTLY.

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DISH AGAIN. BE CAREFUL NOT TO
AROUND IN THE DISH OR DIG IT UP.
R IN ONLY ONE DISH. NOW TAPE THIS
MARK A "T" ON THE TAPE. I WILL

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d.

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g two questions on the chalkboard.

INGS LIVE ON MAN?

T?

UNIT II, CORE A
ACTIVITY 2-1: "Microbes On Me"

Activity name suggested by class:

Teacher
BSCS USE: Post ____ Tally ____ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) | |
|---|---|---|
| HIGH INTEREST | | → ________ ________ ________ ________ |
| MODERATE INTEREST | | |
| INDIFFERENCE | | |
| MODERATE RESISTANCE | | |
| STRONG DISLIKE | | → ________ ________ ________ ________ |
| HARD TO RATE | | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet<br># | <br># | <br># | Game<br># | Slides (show slide nos.) | Transparency<br># | <br># | <br># | Card(s)<br># | Tape(s)<br># | Other<br># |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile ☐ Of value--needs the ☐ Worth salvaging--make ☐ Worthless

8. Materials used:

| Materials used: | Worksheet | | | Game | Slides (show | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | slide nos.) | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:

☐ Worthwhile --keep as is
☐ Of value--needs the revision suggested
☐ Worth salvaging--make major changes described
☐ Worthless --drop it

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Were there any problems in making the agar and preparing all the petri dishes?
☐ No ☐ Yes: Comment.

18. How long did it take to prepare all the dishes and what did the students do while this was happening?

19. Concern (or questions) about content:

20. Messages for staff (read immediately):

BSCS Evaluation: EMH Feedback Form 1c

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

UNIT II, CORE A
ACTIVITY 2-1: "Microbes On Me"

Teacher ________________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

**Me and my Environment**

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

1. Recognize the world of microbes as a part of the world of living things.

CORE A OBJECTIVES:

1. Realize that many living components of the environment are too small to be seen with the unaided eye.
2. Realize that people are habitats for microbes.

## MATERIALS

*Cardboard box (approximately 10" X 12" X 18")
*Yardstick or piece of wood
*100-watt Bulb

(Continued on next page)

*Not furnished in materials kit

## TEACHING STRATEGIES

Activity 2-2. I'm A Habitat

*In this activity the students will observe the petri dishes prepared in the last activity and discover the presence of microorganisms. With the presence of microorganisms established, and the organisms defined as microbes, the students will use Q-tips to collect microbes from various places on their bodies. These wil be spread on the two remaining agar dishes prepared yesterday, and will be placed in an incubator box overnight. The subsequent growth will reinforce the idea that microbes are found in and on our bodies.*

Teacher Preparation:

1. Prepare an incubator box as follows:
   a. Place a yardstick across the top of a cardboar box. See Diagram 2-2.
   b. Suspend a light from the yardstick.

US FOR THIS ACTIVITY

LS:

Recognize the world of microbes as a part of the world of living things.

BJECTIVES:

Realize that many living components of the environment are too small to be seen with the unaided eye.

Realize that people are habitats for microbes.

UNIT II. ME AS A HABITAT

CORE A. MICROBES AND ME

ACTIVITY 2-2. I'M A HABITAT

BSCS

## TEACHING STRATEGIES

I'm A Habitat

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*ablished, and the organisms defined as*
*students will use Q-tips to collect*
*various places on their bodies. These will*
*the two remaining agar dishes prepared*
*d will be placed in an incubator box over-*
*ubsequent growth will reinforce the idea*
*are found in and on our bodies.*

aration:

an incubator box as follows:

ace a yardstick across the top of a cardboard
. See Diagram 2-2.

spend a light from the yardstick.

## ANTICIPATED STUDENT BEHAVIORS

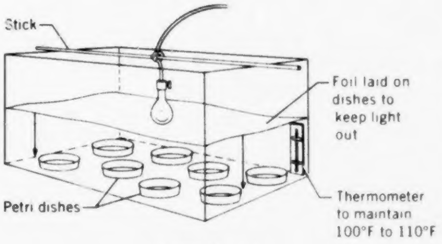
*At the end of this activity, each student should:*

- *--have observed microbes growing on agar in petri dishes.*
- *--have streaked and labeled two agar dishes with microbes from various body locations.*

## MATERIALS

*Extension cord with a socket
*Aluminum foil
*Masking tape
Classroom thermometer (F°)
*1 Tsp of sand
3 Sterile petri dishes per student
3 Sterile Q-tips per student
Clinical thermometer
Alcohol (isopropyl)
2 Medium test tubes
1 Magnifier per student

Diagram 2-2


Stick
Foil laid on dishes to keep light out
Petri dishes
Thermometer to maintain 100°F to 110°F

INCUBATOR BOX

*Not furnished in materials kit

## TEACHING STRATEGIES

c. With a string suspend a thermometer in the box and turn on the light.

d. Adjust the light bulb in the box by moving it up or down until a temperature at or near 100°F is maintained. The temperature should be adjusted with some dishes and the sheet of aluminum foil in place. It may take an hour or two to adjust the temperature.

2. Have materials the student will be working with available at a worktable or a place at which they may be conveniently distributed.

Begin the activity by having each student get the petri dishes he prepared in the last activity. Encourage the students to observe their dishes carefully, especially the one they touched with their fingers. Remind them not to open them. Distribute magnifiers to aid in the observations.

Initiate discussion by asking:

WHAT DO YOU SEE?

ARE THE PETRI DISHES WITH THE AGAR ANY DIFFERENT THAN THEY WERE WHEN YOU PREPARED THEM YESTERDAY?

HOW DID THE SPOTS YOU SEE GET THERE?

There should be significantly more spots (microbe colonies in the dishes the students touched. If students do not respond by indicating that they associate the presence of the spots (microbes) with their touching of the agar, ask:

| EACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| string suspend a thermometer in the box n on the light. |  |
| the light bulb in the box by moving it up until a temperature at or near 100°F is ned. The temperature should be adjusted me dishes and the sheet of aluminum foil e. It may take an hour or two to adjust perature. |  |
| als the student will be working with t a worktable or a place at which they eniently distributed. |  |
| y by having each student get the petri d in the last activity. Encourage the ve their dishes carefully, especially ned with their fingers. Remind them Distribute magnifiers to aid in the |  |
| on by asking: |  |
| SEE? | --respond, "There's stuff in one of them" |
| I DISHES WITH THE AGAR ANY DIFFERENT RE WHEN YOU PREPARED THEM YESTERDAY? | --respond with comments such as, "There's stuff in the one I touched," "This one's dirty," "It's got a lot of spots." |
| SPOTS YOU SEE GET THERE? | --respond with comments such as, "It just got there," "Maybe when I touched it." |
| ignificantly more spots (microbe colonies) students touched. If students do not ting that they associate the presence of es) with their touching of the agar, ask: |  |

## MATERIALS

## TEACHING STRATEGIES

WHAT DID YOU DO TO THE AGAR IN THE DISHES BEFORE TAPING THE DISHES SHUT?

WHICH OF THE DISHES HAS CHANGED THE MOST?

Ask the students to recall the slide sequence from the previous activity by saying:

THE LAST SLIDE YOU SAW YESTERDAY WAS A PERSON. I ASKED IF THERE WERE ANY LIVING THINGS ON PEOPLE. HOW WOULD YOU ANSWER THAT QUESTION TODAY?

It is doubtful the students will recognize the microbes in and on the agar as living things. Therefore say:

THE STUFF ON THE AGAR, THE SMALL SPOTS YOU SEE, ARE ACTUALLY BUNCHES OF TINY LIVING THINGS. THESE TINY LIVING THINGS ARE CALLED "MICROBES."

Write "microbes" on the chalkboard.

SCIENTISTS USE THE WORD MICROBE TO DESCRIBE ANY LIVING THING THAT IS TOO SMALL TO SEE WITH OUR EYES. THERE ARE USUALLY MICROBES ON YOUR FINGERS, AND WHEN YOU TOUCHED THE AGAR SOME OF THE MICROBES STUCK ON THE AGAR.

Based on past experiences, students may have mentioned "germs" in their previous responses, and associated them with causing disease or making people sick. Indicate to the students that germs are one kind of microbe, but not all microbes are germs.

## ING STRATEGIES

O THE AGAR IN THE DISHES
DISHES SHUT?

ES HAS CHANGED THE MOST?

ecall the slide sequence from the
saying:

OU SAW YESTERDAY WAS A PERSON.
WERE ANY LIVING THINGS ON
LD YOU ANSWER THAT QUESTION

udents will recognize the microbes
living things. Therefore say:

AGAR, THE SMALL SPOTS YOU SEE,
CHES OF TINY LIVING THINGS.
G THINGS ARE CALLED "MICROBES."

he chalkboard.

HE WORD MICROBE TO DESCRIBE
THAT IS TOO SMALL TO SEE
THERE ARE USUALLY MICROBES ON
D WHEN YOU TOUCHED THE AGAR
OBES STUCK ON THE AGAR.

nces, students may have mentioned
ious responses, and associated them
or making people sick. Indicate to
ms are one kind of microbe, but not
s.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--recall they touched and rubbed the surface of one of the dishes.

--recognize a greater number of spots (microbe growth) in the touched dishes.

--make comments such as "Yes, the stuff in the dishes," "Maybe they're germs," "Could be," "I don't know."

ACTIVITY 2-2

⑱

**MATERIALS**

**TEACHING STRATEGIES**

DISCUSS MICROBES

Now say:

> IF MICROBES ARE TOO SMALL TO SEE WITH OUR EYES, THEN WHY ARE WE ABLE TO SEE THEM HERE IN THESE DISHES?

Hold up a clean test tube in which you have put a single grain of sand and ask:

> WHAT IS IN THIS TEST TUBE?

Without additional comment hold up a similar test tube containing a teaspoon of sand, ask:

> WHAT IS IN THIS TEST TUBE?

Allow students to examine both tubes closely, suggest using a magnifier. If no student discovers the single sand grain, hold up the test tube with one grain of sand in it and say:

> IN THIS TUBE (indicate tube containing the single grain) IS ONE GRAIN OF SAND. WHY IS IT SO HARD TO SEE IT?

Hold up the tube containing sand.

> WHY DO YOU SEE THE SAND IN THIS TEST TUBE?

Now say:

> MICROBES ARE EVEN SMALLER THAN GRAINS OF SAND.

| CHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| DISCUSS MICROBES AND GERMS |  |
| TOO SMALL TO SEE WITH OUR EYES,<br>ABLE TO SEE THEM HERE IN THESE | --recall that agar is used to grow living things and respond to the effect, "They grew," "They got bigger," "There's a lot more of them." |
| tube in which you have put a single<br>: |  |
| TEST TUBE? | --respond, "Nothing," "It's empty," "Air." |
| omment hold up a similar test tube<br>n of sand, ask: |  |
| TEST TUBE? | --respond, "Sand," "Dirt," "I don't know." |
| amine both tubes closely, suggest using<br>student discovers the single sand<br>est tube with one grain of sand in it |  |
| ndicate tube containing the single<br>RAIN OF SAND. WHY IS IT SO HARD | --respond, "It's too small," "Too tiny." |
| taining sand. |  |
| THE SAND IN THIS TEST TUBE? | --respond by indicating there is enough sand in the tube to make it easy to see. |
| EN SMALLER THAN GRAINS OF SAND. |  |

| MATERIALS | TEACHING STRATEGIES |
|---|---|

> IT IS ALMOST IMPOSSIBLE TO SEE THEM WITH YOUR EYES ALONE. WHEN A BUNCH OF THEM GROW TOGETHER, THEN YOU CAN SEE THEM, JUST LIKE THE SAND IN THE TEST TUBES. THE MORE SAND PARTICLES WE HAVE, THE EASIER THEY ARE TO SEE WITH OUR EYES. ONE REASON THE SCIENTISTS GROW MICROBES ON THE AGAR IS TO GET THEM TO GROW TOGETHER.
>
> MICROBES ARE SO SMALL THAT TO LOOK AT JUST ONE OF THEM, YOU NEED TO USE A MICROSCOPE. THEY ARE MICROSCOPIC IN SIZE.

Write the underlined words on the chalkboard and point out that micro means very tiny, too small to be seen without magnification. Explain that the word microbe means little living things too small to see.

Continue by saying:

> REMEMBER THE LAST QUESTION WE ASKED YESTERDAY: AM I A HABITAT? HOW WOULD YOU ANSWER THAT TODAY?
>
> WHAT IS A HABITAT?
>
> WHERE DO YOU THINK YOU COULD FIND LOTS OF MICROBES ON YOUR BODY?

List responses on the chalkboard. Continue to pursue this question until many places are named, such as:

- Nose
- Ear
- Mouth
- Armpit
- Hair
- Toes
- Fingers

## HING STRATEGIES

OSSIBLE TO SEE THEM WITH YOUR
N A BUNCH OF THEM GROW TOGETHER,
THEM, JUST LIKE THE SAND IN
THE MORE SAND PARTICLES WE HAVE,
RE TO SEE WITH OUR EYES. ONE
TISTS GROW MICROBES ON THE AGAR
O GROW TOGETHER.

SMALL THAT TO LOOK AT JUST ONE
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HOW WOULD YOU ANSWER THAT

T?

NK YOU COULD FIND LOTS OF
BODY?

chalkboard. Continue to pursue
any places are named, such as:

Hair
Toes
Fingers

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond, "I am a habitat."

--respond, "The place where an animal or plant lives."

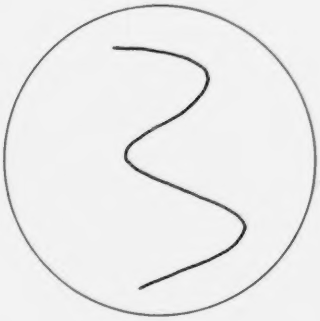
--respond, "Hands," "Hair," "Mouth," "Feet," etc.

ACTIVITY 2-2

⑳

**MATERIALS**

Diagram 2-3



**TEACHING STRATEGIES**

Now ask:

> HOW COULD WE BE SURE THESE PLACES REALLY HAVE MICROBES?

Direct the students to choose two body areas to swab.

Demonstrate how to streak the microbes onto the surface of the agar using Q-tips. Use the two petri dishes prepared in Activity 2-1 that the students have not used. Rub the Q-tips on the selected body part and then gently streak the microbes onto the surface of the agar. Be careful not to dig into the agar. Lift the cover of the petri dish only high enough to streak the microbes. The microbes should be streaked in a pattern rather than all over the agar. See Diagram 2-3.

Distribute one Q-tip to each student, *cautioning them* to touch the tip only to the part of the body to be tested.

Say:

> COLLECT SOME MICROBES FROM ONE OF THE PLACES WE LISTED ON THE CHALKBOARD. CAREFULLY SPREAD THEM ON ONE OF YOUR DISHES THE WAY I JUST SHOWED YOU.
>
> TAPE THE EDGES OF THE DISHES SHUT.
>
> WRITE THE PLACE WHERE YOU COLLECTED THE MICROBES ON THE TAPE.

## HING STRATEGIES

SURE THESE PLACES REALLY HAVE

o choose two body areas to swab.

reak the microbes onto the surface of
. Use the two petri dishes prepared
the students have not used. Rub the
d body part and then gently streak
surface of the agar. Be careful not
. Lift the cover of the petri dish
treak the microbes. The microbes
a pattern rather than all over the
3.

to each student, *cautioning them* to
the part of the body to be tested.

ROBES FROM ONE OF THE PLACES WE
IALKBOARD. CAREFULLY SPREAD THEM
ISHES THE WAY I JUST SHOWED YOU.

F THE DISHES SHUT.

WHERE YOU COLLECTED THE MICROBES

## ANTICIPATED STUDENT BEHAVIORS

Students:

--suggest growing them on prepared petri dishes.

## MATERIALS

## TEACHING STRATEGIES

When students have completed Dish 1, check to see that they have labeled the dish properly. Have each student discard the first Q-tip and distribute another Q-tip. Have them repeat the procedure, selecting a different place on their bodies from which to collect microbes.

Then ask:

> IS THE TEMPERATURE IN OUR ROOM GOOD FOR GROWING MICROBES?
>
> WHAT IS THE TEMPERATURE IN OUR ROOM?

Now have a volunteer determine room temperature by reading the room thermostat or Fahrenheit thermometer. Write on the chalkboard "Room Temperature = __."

Now ask:

> WE HAVE SEEN THAT SOME MICROBES GROW AT ROOM TEMPERATURE. DO YOU THINK THE TEMPERATURE OF YOUR BODY IS A BETTER TEMPERATURE AT WHICH TO GROW MICROBES?
>
> WHAT IS THE TEMPERATURE OF YOUR BODY?

Shake down the clinical thermometer and sterilize it in alcohol. Take the temperature of a volunteer by having him hold the thermometer under his tongue for one minute. Write on the chalkboard "Body Temperature = 98.6." Sterilize the thermometer again and take the temperatures of several more students.

## HING STRATEGIES

mpleted Dish 1, check to see that
dish properly. Have each student
ip and distribute another Q-tip.
procedure, selecting a different
from which to collect microbes.

WORK TIME

RE IN OUR ROOM GOOD FOR GROWING

ERATURE IN OUR ROOM?

determine room temperature by
mostat or Fahrenheit thermometer.
rd "Room Temperature = __."

T SOME MICROBES GROW AT ROOM
YOU THINK THE TEMPERATURE OF
ETTER TEMPERATURE AT WHICH TO

ERATURE OF YOUR BODY?

al thermometer and sterilize it in
mperature of a volunteer by having
ter under his tongue for one minute.
rd "Body Temperature = 98.6."
eter again and take the temperatures
nts.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond, "Maybe," "Yes," "No," "I don't know."

--respond, "Maybe," "Yes," "No," "I don't know."

--respond, "98.6," "98," "I don't know."

**MATERIALS**

**TEACHING STRATEGIES**

Then ask:

WHICH TEMPERATURE WOULD BE BEST FOR GROWING THE MICROBES FROM OUR BODY?

If students do not say this, then ask:

WHERE DID WE GET THE MICROBES?

SO WHAT TEMPERATURE IS PROBABLY THE BEST FOR GROWING THE MICROBES FROM OUR BODIES?

A SPECIAL WARM SPOT TO GROW THINGS IS CALLED AN INCUBATOR. I HAVE MADE AN INCUBATOR FOR MICROBES.

Show the students the incubator box and the temperature in it. Explain how you constructed and adjusted the temperature. Have the students place their dishes in the incubator upside down. Stacking them upside down keeps condensation off the agar surface. Stack two dishes right side up to allow students to observe the condensation. (The dishes may be stacked more than one deep.) Cover the dishes with a layer of aluminum foil explaining that microbes grow better in the dark. Explain that microbes will grow on your body in the light but we want to help the microbes grow as fast as possible. Incubate the dishes overnight. (Put a note on your incubator so that the janitor will not unplug the light!)

Have the pupils photograph the incubator with the petri dishes inside.

| HING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| RE WOULD BE BEST FOR GROWING<br>M OUR BODY? | --infer that if microbes grow on the body, then the body microbes should grow at a temperature similar to that of the body. |
| ay this, then ask: |  |
| T THE MICROBES? | --respond, "From our bodies." |
| TURE IS PROBABLY THE BEST FOR<br>ROBES FROM OUR BODIES? | --infer that microbes from the body should be grown at body temperature. |
| POT TO GROW THINGS IS CALLED<br>I HAVE MADE AN INCUBATOR FOR |  |
| e incubator box and the temperature<br>you constructed and adjusted the<br>ne students place their dishes in<br>down. Stacking them upside down<br>ff the agar surface. Stack two<br>to allow students to observe the<br>dishes may be stacked more than one<br>shes with a layer of aluminum foil<br>obes grow better in the dark. Explain<br>row on your body in the light but we<br>robes grow as fast as possible.<br>overnight. (Put a note on your<br>e janitor will not unplug the light!) |  |
| ograph the incubator with the petri |  |

## MATERIALS

*Formalin
Graduated cylinder (100 ml)
Measuring cup

*Not furnished in materials kit

## TEACHING STRATEGIES

Explain to the students that it will be necessary to wait until the next day to see what happens in the dishes. They should understand that the microbes, if present, will need time to grow enough so that they can be seen. The agar, dishes, and incubator box supply the moisture, warmth, and food necessary for growth.

Now collect the petri dishes touched in Activity 2-1.

Since there could be some danger of spreading disease if the dishes were simply thrown in a garbage pail, keep the dishes taped shut, put them in a paper sack, and give it to the janitor with directions for it to be buried or burned.

Alternate Procedure:

If you have the time and are able to follow the necessary precautions, you may wish to clean and sterilize the petri dishes for reuse. To do so, follow the procedure below.

1. Mix a 10% formalin solution by adding 100 ml (3/4 cup) of formalin to 900 ml (4 2/3 cups) of water (formalin may be purchased at most drug or drug supply stores).
2. Pour enough formalin in the petri dishes containing microbes, to completely cover the surface of the agar. Do this by lifting the petri dish cover only enough to pour in the formalin. Be sure to leave the cover on the dish. Allow 15 minutes for soaking.
3. Using a kitchen knife or spatula, remove the agar from the dishes and place in a paper or plastic bag. The bag should be burned.

## EACHING STRATEGIES

udents that it will be necessary to wait
y to see what happens in the dishes.
stand that the microbes, if present,
grow enough so that they can be seen.
and incubator box supply the moisture,
necessary for growth.

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n the dish. Allow 15 minutes for

chen knife or spatula, remove the agar
shes and place in a paper or plastic
ag should be burned.

## ANTICIPATED STUDENT BEHAVIORS

Students:

## MATERIALS

*Film (*Life In A Drop Of Water*)
Coronet Films

*Not furnished in materials kit

## TEACHING STRATEGIES

4. Place the covers and dishes in a large beaker pan containing liquid household bleach or ammo (straight from the bottle without diluting).

5. After 10 minutes pour off the bleach and rinse dishes well under running water.

6. Immerse the dishes and covers in rubbing alcoh for 10 minutes (rubbing alcohol is available a drug stores and supermarkets).

7. Remove the dishes and covers and stack them up down on a clean surface covered with paper tow After drying, reassemble the dishes and covers They are now ready for use.

Suggested extension of this activity

*Life In A Drop Of Water* (Coronet Films) is a short film that has excellent footage of microscopic life. student puts a drop of pond water on a slide and exa it with the aid of a microscope. If your students h been wondering what microbes look like, this would b excellent opportunity to show them. Since the vocab is more technical than necessary for our purposes, a since the pictures are what we will focus on, it is suggested you show this film without sound. Introdu film only by the title, show it, and then initiate d cussion by asking these and/or other questions conce the material in the film.

WHAT DID YOU SEE IN THE FILM?

YES, THOSE LITTLE THINGS ARE TINY PLANTS AND ANIMALS. WHAT IS ANOTHER NAME FOR THESE LITTLE PLANTS AND ANIMALS?

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| covers and dishes in a large beaker or ning liquid household bleach or ammonia from the bottle without diluting).<br>inutes pour off the bleach and rinse the l under running water.<br>e dishes and covers in rubbing alcohol utes (rubbing alcohol is available at s and supermarkets).<br>dishes and covers and stack them upside- clean surface covered with paper toweling. ng, reassemble the dishes and covers. ow ready for use.<br>ion of this activity<br>*)f Water* (Coronet Films) is a short color cellent footage of microscopic life. A rop of pond water on a slide and examines of a microscope. If your students have hat microbes look like, this would be an unity to show them. Since the vocabulary l than necessary for our purposes, and es are what we will focus on, it is ow this film without sound. Introduce the title, show it, and then initiate dis- g these and/or other questions concerning the film. | |
| U SEE IN THE FILM? | --respond, "Little things," "Animals," "Microbes," "Swimming things." |
| LITTLE THINGS ARE TINY PLANTS AND HAT IS ANOTHER NAME FOR THESE LITTLE ANIMALS? | --recall discussion in earlier activity and respond, "Microbes." |

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | WHERE WERE THESE MICROBES WE SAW?<br>WHAT DID WE NEED TO HELP US SEE THEM?<br>WHAT ARE SOME OF THE THINGS THE MICROBES DID?<br>WHAT DID THE MICROBES LOOK LIKE?<br>DO YOU THINK ALL MICROBES LOOK LIKE THESE?<br>Emphasize that these were only microbes that live in water and that there are many other kinds of microbes. Also tell the students that there were both plant and animal microbes present.<br>Show the film a second time, asking the students to attend especially to the size of the microbes, the differences (if any) between plant and animal microbes, and what the microbes do (do they do the same things other plants and animals do?).<br>After this second showing, allow students to ask questions and discuss the contents further if interest warrants. |

| CHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| SE MICROBES WE SAW? | --respond, "In water," "In a drop." |
| ED TO HELP US SEE THEM? | --respond, "A microscope." |
| OF THE THINGS THE MICROBES DID? | --respond by describing movement, eating, etc. |
| ICROBES LOOK LIKE? | --respond by describing microbes as to shape, size, color, etc. |
| LL MICROBES LOOK LIKE THESE? | --respond, "Yes," "No," "I don't know." |
| e were only microbes that live in e are many other kinds of microbes. nts that there were both plant and sent. | |
| ond time, asking the students to attend ize of the microbes, the differences ant and animal microbes, and what the y do the same things other plants and | |
| howing, allow students to ask questions tents further if interest warrants. | |

UNIT II, CORE A
ACTIVITY 2-2: "I'm A Habitat"

Teacher

Activity name suggested by class:

BSCS USE: Post ____ Tally ____ Rev ____

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|
| 1. Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. Minutes of class time on science each day | | | | | | |
| 3. Minutes of preparation each day | | | | | | |
| 4. Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) |
|---|---|
| HIGH INTEREST | |
| MODERATE INTEREST | |
| INDIFFERENCE | |
| MODERATE RESISTANCE | |
| STRONG DISLIKE | |
| HARD TO RATE | |

HIGH INTEREST → ________ ________ ________ ________

STRONG DISLIKE → ________ ________ ________ ________

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

|  | Worksheet |  |  | Game | Slides (show | Transparency |  |  | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | # | # | # | # | slide nos.) | # | # | # | # | # | # |
| Worthwhile as is |  |  |  |  |  |  |  |  |  |  |  |
| Revise slightly |  |  |  |  |  |  |  |  |  |  |  |
| Revise much |  |  |  |  |  |  |  |  |  |  |  |
| Worthless: omit |  |  |  |  |  |  |  |  |  |  |  |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed.
What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Were there any problems in preparing the incubator box and adjusting the temperature?
☐ No ☐ Yes: Comment.

18. Do you have suggestions for specific ways to use the film?
☐ No ☐ Yes: Comment.

19. Concern (or questions) about content:

20. Messages for staff (read immediately):

BSCS Evaluation: EMH Feedback Form 1c

Have you answered each question, attached **annotated Guide, your revisions, student work, etc.**?

SIDE A

UNIT II, CORE A
ACTIVITY 2-2: "I'm A Habitat"

Teacher ________________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

Me and my Environment

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

1. Recognize the world of microbes as a pa of the world of living things.
2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.

CORE A OBJECTIVES:

1. Realize that many living components of environment are too small to be seen wi the unaided eye.
2. Realize that people are habitats for microbes.

| MATERIALS | TEACHING STRATEGIES |
|---|---|

Activity 2-3. Seeing Is Believing

*This activity serves as a follow-up of Activity 2-2. Here the students observe and record the microbial growth initiated previously.*

THIS ACTIVITY

nize the world of microbes as a part
e world of living things.

stand that the human body can be
ly affected by both living and
ving factors in the environment.

VES:

ze that many living components of the
onment are too small to be seen with
naided eye.

ze that people are habitats for
bes.

## ACHING STRATEGIES

ng Is Believing

*s as a follow-up of Activity 2-2.*
*bserve and record the microbial*
*eviously.*

UNIT II. ME AS A HABITAT

CORE A. MICROBES AND ME

ACTIVITY 2-3. SEEING IS BELIEVING

BSCS

## ANTICIPATED STUDENT BEHAVIORS

*At the end of this activity, each student should:*

- *--have observed growth of microbes in previously inoculated dishes.*
- *--have sketched the outline of the microbial growth on Worksheet 2-1.*
- *--have used the overhead projector to take a Polaroid picture of his dishes.*
- *--have related the worksheet and photograph as two forms of data collection.*
- *--have compared growth in his dishes with others in the class.*
- *--have recognized the visible microbe colonies as being made up of many microbes.*
- *--have named some products we use on our bodies that might kill microbes.*

## MATERIALS

Worksheet 2-1 (partially complete)
*Colored pencils (variety)
Camera (Polaroid Square Shooter)
Film, two rolls (Polaroid Colorpack Film 88)
*Overhead projector

*Not furnished in materials kit

## TEACHING STRATEGIES

Have the students get their petri dishes from the incubating box. Give students time to examine their dishes. They undoubtedly will be excited about the microbes grown, so give them a chance to look at everyone's dishes. Remind the students not to remove the covers from the petri dishes. Have magnifiers available and encourage the students to use them.

When sufficient time has been provided to look at each other's microbe colonies, begin to develop the informal observations they have made. Make a list on the chalkboard of the underlined words below, to be used later as a guide for their drawings.

Say:

> LOOK CAREFULLY AT THE MICROBE COLONIES IN YOUR DISHES.
>
> WHERE ARE THE MICROBES LOCATED IN YOUR DISH?
>
> DO THEY MAKE A PATTERN ACROSS THE DISH?
>
> WHAT IS THE PATTERN?
>
> ARE ALL OF YOUR PATTERNS EXACTLY THE SAME?
>
> DO ALL THE MICROBES IN ALL OF YOUR DISHES LOOK ALIKE?

If students ask about microbes that may be growing outside the pattern, explain that this growth is due to contamination. Tell them they must have breathed on the agar, or microbes from the air must have gotten in and landed on the agar.

| HING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| their petri dishes from the students time to examine their edly will be excited about the ve them a chance to look at every- the students not to remove the dishes. Have magnifiers available dents to use them. | |
| as been provided to look at each ies, begin to develop the informal e made. Make a list on the chalk- ed words below, to be used later as wings. | |
| T THE MICROBE COLONIES IN | |
| CROBES LOCATED IN YOUR DISH? | --respond with various answers. |
| ATTERN ACROSS THE DISH? | --respond, "Yes." |
| ERN? | --recognize that they are growing in the pattern they made with the Q-tips. |
| ATTERNS EXACTLY THE SAME? | --respond, "No." |
| BES IN ALL OF YOUR DISHES | --observe the microbes and respond, "Yes," "No." |
| microbes that may be growing outside hat this growth is due to contami- ey must have breathed on the agar, or must have gotten in and landed on | |

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | Select a petri dish and display it to the class. Point to the microbe colony and say:<br>DO YOU THINK THIS IS ONE MICROBE?<br>DO ALL OF THE MICROBES HAVE THE SAME SHAPE?<br>CAN YOU TELL WITH A MAGNIFYING GLASS?<br>HOW BIG ARE THE MICROBES?<br>DO THEY ALL LOOK THE SAME SIZE?<br>Explain that some microbes grow faster than others and that the dishes have several kinds of microbes growing in them.<br>WHAT COLOR DO THE MICROBES HAVE?<br>WHY AREN'T THEY ALL THE SAME COLOR?<br>Hand out Worksheet 2-1. Have colored pencils available. Say:<br>TAKE ONE OF YOUR DISHES AND WRITE DOWN UNDER DISH 1 ON YOUR WORKSHEET WHERE ON YOUR BODY THE MICROBE CAME FROM. THEN CAREFULLY DRAW WHAT YOU SEE IN YOUR DISH ON THE WORKSHEET, USING COLORED PENCILS. |

| STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| isplay it to the class. Point say: | |
| ONE MICROBE? | --recall grain of sand versus teaspoon of sand from last activity and respond, "No, it's a whole bunch." |
| ES HAVE THE SAME SHAPE? | --respond, "No," "Don't know." |
| MAGNIFYING GLASS? | --respond, "No, they are too small." |
| OBES? | --respond, "Not very big," "Tiny," "Can't tell." |
| SAME SIZE? | --respond, "Yes," "No," "Looks like there are more in some dishes." |
| s grow faster than others and ral kinds of microbes growing | |
| CROBES HAVE? | --respond with different colors. |
| THE SAME COLOR? | --respond, "There must be different kinds of microbes there." |
| Have colored pencils available. | |
| HES AND WRITE DOWN UNDER HEET WHERE ON YOUR BODY M. THEN CAREFULLY DRAW DISH ON THE WORKSHEET, S. | |

ACTIVITY 2-3

㉚

**MATERIALS**

**TEACHING STRATEGIES**

When some of the students have finished with Dish 1, call the class's attention to the list on the chalkboard. Assist them in reviewing it. Then direct them to label the body spot for Dish 2 and carefully draw what they see in Dish 2.

As students are drawing, go around to provide help as needed. Use Tallysheet 2-1 to rate the accuracy (and hence the usefulness) of each student's drawings. This will alert you to which students need help comparing worksheets in the next activity.

When some students have finished drawing both of their microbe colonies, demonstrate to the class how to photograph their dishes using the overhead projector.

Set up the projector six feet away from the screen or wall. Focus the projector on the bottom of the dish rather than on the cover. Take the picture from about four feet away in order to completely fill the picture with the two dishes.

Say:

> WHEN YOU HAVE DRAWN BOTH MICROBE COLONIES ON YOUR WORKSHEET, BRING YOUR TWO DISHES TO THE OVERHEAD PROJECTOR. POSITION THE DISHES SO THEY PROJECT AT EYE LEVEL. THEN GET THE CAMERA AND SET THE EXPOSURE TWO LINES LIGHTER THAN NORMAL. STAND CLOSE ENOUGH TO COMPLETELY FILL THE VIEWFINDER WITH THE DISHES AND BE SURE TO FOCUS THE CAMERA. AFTER YOU HAVE TAKEN THE PICTURE, PUT YOUR NAME ON THE BACK AND TELL WHAT IS IN EACH DISH.

## ING STRATEGIES

## ANTICIPATED STUDENT BEHAVIORS

**WORK TIME**

ts have finished with Dish 1, call
o the list on the chalkboard.
g it. Then direct them to label
2 and carefully draw what they see

, go around to provide help as
2-1 to rate the accuracy (and
f each student's drawings. This
students need help comparing
activity.

finished drawing both of their
strate to the class how to photo-
g the overhead projector.

x feet away from the screen or wall.
the bottom of the dish rather than
picture from about four feet away
fill the picture with the two

N BOTH MICROBE COLONIES ON YOUR
OUR TWO DISHES TO THE OVERHEAD
ON THE DISHES SO THEY PROJECT
N GET THE CAMERA AND SET THE
LIGHTER THAN NORMAL. STAND
MPLETELY FILL THE VIEWFINDER
D BE SURE TO FOCUS THE CAMERA.
EN THE PICTURE, PUT YOUR NAME
LL WHAT IS IN EACH DISH.

### MATERIALS

### TEACHING STRATEGIES

> WE HAVE NOW COLLECTED DATA IN TWO DIFFERENT WAYS? WHAT ARE THEY?
>
> WHY DO BOTH?

When the pictures are ready, direct the students to clip the snapshot to the worksheet, using a paperclip. Be sure to stamp the pictures and fill in the identifying information on the back. (At the end of Activity 2-4, select the best photograph and drawing to send to BSCS.)

Collect the worksheets and snapshots. They will be used again in Activity 2-3. Complete Tallysheet 2-1 to rate success of this task with your students.

Say:

> WHEN A WHOLE BUNCH OF MICROBES GROW TOGETHER SO THEY CAN BE SEEN, WE CALL THEM A MICROBE COLONY. IMAGINE YOU ARE FLYING IN AN AIRPLANE VERY HIGH IN THE SKY. DO YOU THINK YOU COULD SEE ONE PERSON ON THE GROUND?
>
> PROBABLY NOT. BUT WE COULD SEE CITIES VERY WELL. THIS IS WHAT HAS HAPPENED WITH OUR MICROBE COLONY. SO MANY MILLIONS OF MICROBES ARE GROWING TOGETHER WE CAN SEE THEM.

## CHING STRATEGIES

CAMERA TIME

LLECTED DATA IN TWO DIFFERENT
E THEY?

re ready, direct the students to clip
worksheet, using a paperclip. Be sure
es and fill in the identifying infor-
. (At the end of Activity 2-4, select
and drawing to send to BSCS.)

ets and snapshots. They will be used
-3. Complete Tallysheet 2-1 to rate
k with your students.

UNCH OF MICROBES GROW TOGETHER
SEEN, WE CALL THEM A MICROBE
NE YOU ARE FLYING IN AN AIRPLANE
HE SKY. DO YOU THINK YOU COULD
ON THE GROUND?

BUT WE COULD SEE CITIES VERY
WHAT HAS HAPPENED WITH OUR
. SO MANY MILLIONS OF MICROBES
GETHER WE CAN SEE THEM.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--relate the drawings and photographs as two methods of collecting data.

--could indicate that one is a check against the other. Photography is more expensive than drawing, but it is probably more accurate.

--respond, "No."

ACTIVITY 2-3

| MATERIALS |
|---|
| |

## TEACHING STRATEGIES

WE HAVE SHOWN THAT WE HAVE MANY MICROBES ON OUR BODIES. WHAT ARE SOME THINGS USED TO KILL MICROBES ON OUR BODIES?

Have students think about the areas of the body from which they cultured microbes. Ask:

WHAT KINDS OF PRODUCTS ARE USED ON THIS PART OF THE BODY?

Write these body areas on the chalkboard and list the products students name. Continue the list to include all body spots used by your students.

Pursue this question, accepting all responses, until many types of health care products have been listed. Tell students that tomorrow they are going to collect body microbes again and see if some of the products they have named can kill the microbes. Select some of the products listed on the chalkboard for students to bring in tomorrow. To insure variety, bring in some products yourself.

NOTE: In Core B, Activity 2-11, students will test various antiseptics (alcohol, iodine, bactine, etc.) as microbe fighters. Try to concentrate on cleansing rather than disinfecting products at this time.

Upon completion of this activity, you should dispose of or sterilize the agar and the petri dishes as outlined in Activity 2-3.

## G STRATEGIES

E HAVE MANY MICROBES ON
E SOME THINGS USED TO
BODIES?

the areas of the body from
bes.  Ask:

TS ARE USED ON THIS PART

n the chalkboard and list the
Continue the list to include
our students.

cepting all responses, until many
ducts have been listed.  Tell
hey are going to collect body
some of the products they have
bes.  Select some of the products
for students to bring in tomorrow.
in some products yourself.

ty 2-11, students will test various
hol, iodine, bactine, etc.) as
Try to concentrate on cleansing
fecting products at this time.

activity, you should dispose of
d the petri dishes as outlined in

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond, "Soap and water," "Mouthwash," "Deodorant."

--should relate information aobut each part as follows:

Mouth - mouthwash, cough drops, toothpaste
Ears - eardrops, soap and water
Nose - nose drops, soap and water
Armpits - deodorant, cologne, soap and water
Hands - lotion, soap and water.

Teacher ______________________
Date ______________________

### UNIT II, CORE A
### Activity 2-3: "Seeing Is Believing"

### Tallysheet 2-1
### Drawings and Photographs of Microbe Colonies

On the left below are the criteria for rating students on Worksheet 2-1. Check one column for each student.

Also rate the Polaroid picture taken by each student. Criteria for this rating is explained on the right below.

Worksheet 2-1: Rating of Student Drawing

Useful for comparison. This category should be checked if the student makes a reasonable enough reproduction of the microbe colonies so that it can be used in making comparisons with microbes grown in the next activity.

Not useful for comparison. This category should be checked if the student experiences a great deal of difficulty in reproducing recognizable microbe colonies or cannot reproduce a drawing that can be meaningfully compared with appearance of microbe colonies on other agar plates.

Rating of Student Photographs

Good: Picture is in focus, adequately exposed, centered well enough to use for comparison.
Problem: Picture is of poor quality due to focus, light (exposure), aim (not centered), or some other problem such as camera jiggled.
No Picture: Please indicate if student could not operate the camera or why no picture was taken.

| | Useful for comparison | Not useful for comparison | Good | Problem (circle one or more) | | | | No picture (why?) |
|---|---|---|---|---|---|---|---|---|
| Teacher | | | | Focus | Light | Aim | Other | |
| Insert ID list here. 01 | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |

iences a great deal of difficulty in reproducing recognizable microbe colonies or cannot reproduce a drawing that can be meaningfully compared with appearance of microbe colonies on other agar plates.

| | Useful for comparison | Not useful for comparison | Good | Problem (circle one or more) | | | | No picture (why?) |
|---|---|---|---|---|---|---|---|---|
| Teacher | | | | Focus | Light | Aim | Other | |
| Insert ID list 01<br>here. | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |
| | | | | Focus | Light | Aim | Other | |

UNIT II, CORE A
ACTIVITY 2-3: "Seeing Is Believing"

Teacher

Activity name suggested by class:

BSCS USE: Post ____ Tally ____ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) |
|---|---|
| HIGH INTEREST | |
| MODERATE INTEREST | |
| INDIFFERENCE | |
| MODERATE RESISTANCE | |
| STRONG DISLIKE | |
| HARD TO RATE | |

→ ________ ________ ________ ________

→ ________ ________ ________ ________

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile ☐ Of value--needs the ☐ Worth salvaging--make ☐ Worthless

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:

☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

---

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Did students have difficulty photographing their drawings and petri dishes?
☐ No ☐ Yes: Comment.

18. Be sure to select at least one photograph and drawing to send in to BSCS after students use them in Activity 2-4.

19. Complete and send in Tallysheet #1.

20. Concern (or questions) about content:

21. Messages for staff (read immediately):

BSCS Evaluation: EMH Feedback Form 1c

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

UNIT II, CORE A
ACTIVITY 2-3: "Seeing Is Believing"

Teacher ________________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.

3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.

4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE A OBJECTIVES:

1. Realize that many living components of the environment are too small to be seen with the unaided eye.

2. Realize that people are habitats for microbes.

4. Understand the need for cleanliness.

## MATERIALS

## TEACHING STRATEGIES

Activity 2-4. Keep It Clean

*This activity will allow students to experiment with various cleansing products to determine their effectiveness in fighting microbes taken from their bodies.*

THIS ACTIVITY

stand that the human body can be
y affected by both living and
ing factors in the environment.

hend the effects of certain elements
environment (disease, drugs, alcohol,
oking) and some of their social and
logical aspects.

e that he has some control over his
ate environment and can obtain a
r degree of well-being through
ous effort.

ES:

e that many living components of the
nment are too small to be seen with
aided eye.

e that people are habitats for
es.

tand the need for cleanliness.

UNIT II. ME AS A HABITAT

CORE A. MICROBES AND ME

ACTIVITY 2-4. KEEP IT CLEAN

BSCS

## ACHING STRATEGIES

It Clean

*llow students to experiment with*
*oducts to determine their effective-*
*robes taken from their bodies.*

## ANTICIPATED STUDENT BEHAVIORS

*At the end of this activity, each student should:*

- *--have participated in discussing how to design an experiment.*
- *--have prepared three agar plates.*
- *--have collected microbes from one of the same body areas as was used in Activity 2-3; have placed the microbes and various cleansing products on agar plates; have properly labeled the plates; and placed them in the incubator.*

ACTIVITY 2-4

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## MATERIALS

*Container to boil water
*1 Quart (1000 ml) boiling water
 2 Tablespoons of nutrient agar
 Hot plate
*Masking tape
 3 Sterile petri dishes per student
 1 Pyrex beaker (100 ml) per student
 Glass stirring rod
 Worksheet 2-1, partially completed
 Petri dishes inoculated in Activity 2-3
*Mouthwash
*Deodorant
*Lysol (or disinfectant)
*Soapy water made from several brands of hand, dish, and laundry soaps and detergents
*Any other cleansing product or disinfectant
 2 Sterile Q-tips per student
 Formaldehyde (formalin)
*Tongs
*Container for soap and water
 Worksheet 2-2
 Slide 2-7
*35mm Slide projector

*Not furnished in materials kit

## TEACHING STRATEGIES

Begin the lesson by having each student prepare three agar dishes according to the procedure outlined in the last few pages of Activity 2-1. Review the procedure carefully with your students, step by step. This time talk about microbes and explain why the covers are kept on the petri dishes. Introduce the word sterile and explain that the dishes have had all the microbes removed from them. When something is sterile, nothing is expected to be growing on it.

While the agar is hardening, pass out Worksheet 2-1. Say:

> (Student's name),TELL ME ABOUT THIS WORKSHEET.
>
> WHAT QUESTIONS WERE WE TRYING TO ANSWER BY DOING THIS?
>
> WHAT DID WE FIND OUT?

Ask:

> WHERE DID WE GET SAMPLES OF MICROBES TO PUT ON THE AGAR?

List places on chalkboard as students name them.

## CHING STRATEGIES

having each student prepare three agar the procedure outlined in the last y 2-1. Review the procedure carefully step by step. This time talk about why the covers are kept on the petri he word sterile and explain that the the microbes removed from them. When , nothing is expected to be growing on

ardening, pass out Worksheet 2-1. Say:

e),TELL ME ABOUT THIS WORKSHEET.

WERE WE TRYING TO ANSWER BY

D OUT?

T SAMPLES OF MICROBES TO PUT

board as students name them.

## ANTICIPATED STUDENT BEHAVIORS

*--have labeled Worksheet 2-1 and sketched microbial colonies.*

*--have compared microbial growth on plates treated with different cleansing agents.*

*--have compared microbial growth as depicted on Worksheets 2-1 and 2-2.*

*--have used snapshots to compare microbial growth with and without cleansing agents.*

Students:

--respond that these are pictures we drew of microbes that grew on agar overnight.

--respond, "Is man a habitat?"

--realize that man is a habitat and so answer.

--will inspect their worksheets and reply, "From the mouth, nose, ears, face, hands, etc."

| MATERIALS | TEACHING STRATEGIES |
|---|---|

Say:

LET'S FIND OUT IF ANY OF THE PRODUCTS WE USE ON THESE AREAS ARE MICROBE FIGHTERS.

WHAT ARE SOME OF THE PRODUCTS WE USE ON OR IN (mouth, face, hands, armpits, etc.)?

DOES ANYONE HAVE AN IDEA OF HOW WE CAN FIND OUT IF ANY OF THESE PRODUCTS ARE MICROBE FIGHTERS?

Say:

WE WANT TO TRY TO ANSWER TWO QUESTIONS IN OUR EXPERIMENT TODAY:

1. DO THE PRODUCTS WE USE ON OUR BODIES DO ANYTHING TO MICROBES?
2. ARE SOME PRODUCTS BETTER MICROBE FIGHTERS THAN OTHERS?

(Student's name) HAS SUGGESTED WE PUT SOME OF THE PRODUCT IN WITH THE MICROBES ON THE AGAR. WHAT SHOULD WE DO TO ANSWER THE QUESTION, "ARE SOME PRODUCTS BETTER MICROBE FIGHTERS THAN OTHERS?"

NOTE: In order to test to see if the microbe fighters work better on some microbes than others, the microbe samples must be identical (from similar portions of the body).

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| OUT IF ANY OF THE PRODUCTS WE E AREAS ARE MICROBE FIGHTERS. | |
| ME OF THE PRODUCTS WE USE ON h, face, hands, armpits, etc.)? | --will suggest various types of soap, deodorants, mouthwashes, toothpaste, etc. |
| HAVE AN IDEA OF HOW WE CAN FIND OF THESE PRODUCTS ARE MICROBE | --respond, "Put some of the microbes on the agar and put some of the product on the agar." |
| TRY TO ANSWER TWO QUESTIONS IN OUR TODAY: | |
| THE PRODUCTS WE USE ON OUR BODIES ANYTHING TO MICROBES? | |
| E SOME PRODUCTS BETTER MICROBE GHTERS THAN OTHERS? | |
| name) HAS SUGGESTED WE PUT SOME OF IN WITH THE MICROBES ON THE AGAR. WE DO TO ANSWER THE QUESTION, "ARE TS BETTER MICROBE FIGHTERS THAN | --will suggest trying several products on samples of microbes. |
| to test to see if the microbe fighters ter on some microbes than others, the samples must be identical (from similar of the body). | |

**MATERIALS**

**TEACHING STRATEGIES**

If your students do not say that the microbe sample must be the same for each product tried, ask:

ARE ALL MICROBES THE SAME?

WHAT IF ONE OF YOU PUT MOUTHWASH ON YOUR UNDERARM MICROBES AND SOAP ON YOUR MOUTH MICROBES? WOULD THAT TELL US WHICH OF THE PRODUCTS WAS A BETTER MICROBE FIGHTER?

WHY?

Then ask:

HOW WILL YOU KNOW IF ANY OF THE PRODUCTS DO ANYTHING TO MICROBES?

HOW WILL YOU KNOW WHAT THE AGAR PLATE WOULD HAVE LOOKED LIKE IF NO PRODUCT HAD BEEN USED?

Say:

GOOD IDEA! IT IS IMPORTANT TO HAVE AN AGAR PLATE OF THE MICROBE SAMPLE WITHOUT ANY PRODUCT ON IT FOR COMPARISON.

EACH OF YOU CHOOSE ONE OF THE TWO PLACES YOU TESTED FOR MICROBES LAST TIME. WRITE THE NAME OF THAT ONE BODY SPOT NEXT TO EACH OF THE DISHES ON THE WORKSHEET I WILL PASS OUT NOW.

| HING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| dents do not say that the microbe be the same for each product tried, |  |
| ROBES THE SAME? | --respond, "No." |
| OF YOU PUT MOUTHWASH ON YOUR CROBES AND SOAP ON YOUR MOUTH OULD THAT TELL US WHICH OF WAS A BETTER MICROBE FIGHTER? | --respond, "No," "Yes."<br>--respond, "The mouthwash might only be good on mouth microbes and not underarm microbes," "The soap and mouthwash must be tried on the same microbes to find out if they have the same killing power." |
| IF ANY OF THE PRODUCTS DO BES? | --respond, "The microbes won't grow," "The clumps of microbes won't be as thick as they are in dishes without the fighter." |
| WHAT THE AGAR PLATE WOULD IF NO PRODUCT HAD BEEN USED? | --respond, "We can compare it to the sample we drew a picture of." |
| IMPORTANT TO HAVE AN AGAR ROBE SAMPLE WITHOUT ANY R COMPARISON. |  |
| E ONE OF THE TWO PLACES YOU BES LAST TIME. WRITE THE BODY SPOT NEXT TO EACH OF THE RKSHEET I WILL PASS OUT NOW. |  |

## MATERIALS

Slide 2-7

Worksheet 2-2

Date
Name
Dish #1
(Body spot)
Microbe fighter
Dish #2
(Body spot)
Microbe fighter
(Body spot)
Microbe fighter
Dish # 3

## TEACHING STRATEGIES

Pass out Worksheet 2-2 and have the students write their names and the date at the top.

When everyone has done this, project Slide 2-7 to demonstrate how the students are to mark the body spots of their choice on Worksheet 2-2. Then continue:

> WHAT IS A PRODUCT WE USE ON ALMOST EVERY PART OF OUR BODY?
>
> THAT'S RIGHT! SO EVERYONE SHOULD TRY SOAPY WATER ON DISH 1.
>
> WE HAVE THESE SOAPS TO TEST: (Name them and be sure they are labeled. Try to have one soap with antibacterial ingredients.) WRITE THE KIND OF SOAP YOU WANT TO TRY WHERE IT SAYS "MICROBE FIGHTER" BY DISH 1 ON THE WORKSHEET.

Organize the soap and detergent solutions in one central area. You can make enough soap solution for the class by adding one tablespoon of powder, liquid, or flakes to 500 ml of water. Stir until dissolved. (If using bar soap, scrape or cut with a knife enough powder or flakes to make a tablespoon.) Demonstrate how to spray or pour the products on the agar in the dishes. Do this in the same manner the agar was poured. Again caution students not to remove the covers, but to lift them merely high enough to pour. Only enough solution should be added to cover the surface of the agar. Each student should add a soap or detergent solution to Dish 1.

> FOR DISH 2, EACH OF YOU PICK A PRODUCT THAT IS USED ON THE BODY SPOT YOU ARE GETTING MICROBES FROM.

## G STRATEGIES

nd have the students write their
e top.

nis, project Slide 2-7 to
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neet 2-2. Then continue:

E USE ON ALMOST EVERY

VERYONE SHOULD TRY SOAPY

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, but to lift them merely high
ough solution should be added to
agar. Each student should add a
on to Dish 1.

YOU PICK A PRODUCT THAT IS
OT YOU ARE GETTING MICROBES

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond, "Soap and water."

**MATERIALS**

**TEACHING STRATEGIES**

NOTE: Place all of the soaps in one central location. Have other stations in the room for mouth produc another for deodorants, etc. Point out where students may find products for their body spot.

Then say:

WHAT SHOULD WE DO FOR DISH 3?

Some students may have good suggestions for the third petri dish. Let them try these. Other students may wa to put nothing but microbes in it. This is fine, for it gives them a better control for comparison than the earlier worksheet. Some may want to put nothing in the third petri dish. This is fine, for it provides anothe kind of control -- whether the dishes were relatively f from microbe contamination (sterile). Some students ma want to try a combination of the products in Dish 1 and Dish 2. Encourage many different ideas.

When all students have written what they will test on their worksheets, have them each take three pieces of t for labels, write their names and the number 1, 2, or 3 on each tape, and stick it on top of the proper petri d Since liquids are being added, the dishes cannot be tur over.

See that each dish is labeled with the student's name, body spot the microbe was collected from, and the soap solution or other product that was added to the dish. Place all dishes in the incubating box for at least 24 hours.

Collect the two worksheets and keep them until you pass them out tomorrow.

WAIT UNTIL T

| CHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| the soaps in one central location. ations in the room for mouth products, eodorants, etc. Point out where find products for their body spot. | |
| DO FOR DISH 3? | --answers will vary. |
| ve good suggestions for the third m try these. Other students may want icrobes in it. This is fine, for it control for comparison than the Some may want to put nothing in the his is fine, for it provides another hether the dishes were relatively free nation (sterile). Some students may ation of the products in Dish 1 and any different ideas. | |
| ve written what they will test on ve them each take three pieces of tape eir names and the number 1, 2, or 3 ick it on top of the proper petri dish. ing added, the dishes cannot be turned | |
| s labeled with the student's name, the e was collected from, and the soap oduct that was added to the dish. the incubating box for at least 24 | |
| sheets and keep them until you pass | |

WAIT UNTIL THE NEXT DAY TO CONTINUE

| MATERIALS | TEACHING STRATEGIES |
|---|---|
|  | The next day have the students get their petri dishes from the incubator. *Caution them not to tip them or they will spill.* Give them time to observe and compare their own dishes with those of other students. |

OBSERVAT

When they have had time to observe and compare dishes, draw attention to Worksheet 2-2, say:

> TAKE DISH 1 AND PLACE IT BY YOUR WORKSHEET. IN THE CIRCLE FOR DISH 1 DRAW WHAT YOU SEE. IF YOU DO NOT SEE ANYTHING, DO NOT DRAW ANYTHING. WHEN YOU FINISH DRAWING DISH 1, DO THE SAME FOR DISHES 2 AND 3.

When some are finishing, say:

> AFTER YOU HAVE MADE THE DRAWINGS, DECIDE WHICH DISH HAD THE SMALLEST AMOUNT OF MICROBE GROWTH. CIRCLE THE NAME OF THAT PRODUCT AND WRITE "BEST MICROBE FIGHTER" BY IT. WHEN YOU HAVE DONE THIS, YOU MAY GO AROUND TO OTHER STUDENTS TO SEE WHAT PRODUCT WAS THE BEST MICROBE FIGHTER IN THEIR EXPERIMENT. LOOK TO SEE IF SOMEONE ELSE HAD BETTER MICROBE FIGHTERS THAN YOURS.

When all have finished their drawings, select a student to distribute Worksheet 2-1 and the attached photograph. Direct students to put the two worksheets side by side on their desks.

## HING STRATEGIES

## ANTICIPATED STUDENT BEHAVIORS

e students get their petri dishes from
*ion them not to tip them or they will*
ne to observe and compare their own
other students.

OBSERVATION TIME

ime to observe and compare dishes,
rksheet 2-2, say:

PLACE IT BY YOUR WORKSHEET.
OR DISH 1 DRAW WHAT YOU SEE.
EE ANYTHING, DO NOT DRAW
YOU FINISH DRAWING DISH 1,
DISHES 2 AND 3.

WORK TIME

ing, say:

MADE THE DRAWINGS, DECIDE
THE SMALLEST AMOUNT OF MICROBE
THE NAME OF THAT PRODUCT AND
ROBE FIGHTER" BY IT. WHEN YOU
YOU MAY GO AROUND TO OTHER
WHAT PRODUCT WAS THE BEST
IN THEIR EXPERIMENT. LOOK
NE ELSE HAD BETTER MICROBE
OURS.

ed their drawings, select a student
eet 2-1 and the attached photograph.
ut the two worksheets side by side

**MATERIALS**

**TEACHING STRATEGIES**

Then say:

> LOOK AT YOUR TWO SETS OF DRAWINGS. USE YOUR SNAPSHOTS IF IT HELPS TO COMPARE. HOW DO THEY COMPARE?
>
> WHAT DIFFERENCES DO YOU SEE?
>
> WHICH MICROBE FIGHTER KILLED THE MOST MICROBES?

Make a list of the best microbe fighters on the chalkboard.

> WHICH MICROBE FIGHTER KILLED THE LEAST NUMBER OF MICROBES?

Write a list of the weakest microbe fighters on the chalkboard.

> WAS YOUR WEAKEST MICROBE FIGHTER BETTER THAN NO MICROBE FIGHTER AT ALL?
>
> WAS SOAPY WATER ONE OF THE BEST MICROBE FIGHTERS?
>
> IF SOAPY WATER DOESN'T KILL MICROBES, WHY DO WE USE SOAP AND WATER?

Explain that soap is used because it helps wash microbes off the skin. Tell the class that if you go for a long time without washing the microbes off of your body, they cause bad smells. It is easier to wash microbes down the drain with soapy water than to try to kill all the microbes on the body.

| ACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| WO SETS OF DRAWINGS. USE YOUR T HELPS TO COMPARE. HOW DO THEY | --compare drawings and describe results. |
| ES DO YOU SEE? | --respond, "Some microbe fighters killed microbes and some didn't," "The first set of dishes has more microbes." |
| FIGHTER KILLED THE MOST MICROBES? | --each student names his "best microbe fighter." |
| best microbe fighters on the chalkboard. | |
| FIGHTER KILLED THE LEAST NUMBER | --each student names his "weakest microbe fighter." |
| e weakest microbe fighters on the | |
| EST MICROBE FIGHTER BETTER THAN NO ER AT ALL? | --compare Worksheets 2-1 and 2-2 and state a conclusion. |
| ER ONE OF THE BEST MICROBE FIGHTERS? | --respond, "No." |
| R DOESN'T KILL MICROBES, WHY DO D WATER? | --respond, "I don't know." |
| is used because it helps wash microbes l the class that if you go for a long ng the microbes off of your body, they It is easier to wash microbes down the ater than to try to kill all the dy. | |

**MATERIALS**

**TEACHING STRATEGIES**

Say:

> PLAIN OLD SOAP AND WATER IS STILL ONE OF THE CHEAPEST AND BEST WAYS TO CONTROL MICROBES, EVEN THOUGH IT DOES NOT KILL THEM. IT IS ALSO ONE OF THE EASIEST AND BEST WAYS TO KEEP YOUR BODY FROM SMELLING BAD. YOU SHOULD TRY TO SHOWER OR TAKE A BATH ALMOST EVERY DAY.

At the end of this activity, collect the snapshots of microbe colonies for a student-made bulletin board. Ha two student volunteers design and make a bulletin board on the topic, "Microbes From Our Bodies."

Upon completion of this activity, you should dispose of or sterilize the agar and petri dishes as outlined in Activity 2-2.

**IG STRATEGIES**

WATER IS STILL ONE OF THE
AYS TO CONTROL MICROBES,
NOT KILL THEM. IT IS
IEST AND BEST WAYS TO KEEP
LLING BAD. YOU SHOULD TRY
BATH ALMOST EVERY DAY.

ity, collect the snapshots of
tudent-made bulletin board. Have
esign and make a bulletin board
From Our Bodies."

activity, you should dispose of
d petri dishes as outlined in

**ANTICIPATED STUDENT BEHAVIORS**

UNIT II, CORE A
ACTIVITY 2-4: "Keep It Clean"

Activity name suggested by class:

Teacher
BSCS USE: Post ____ Tally ____ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: (Number) Name students you noted especially:

| | (Number) | |
|---|---|---|
| HIGH INTEREST | | → ________ ________ ________ ________ |
| MODERATE INTEREST | | |
| INDIFFERENCE | | |
| MODERATE RESISTANCE | | |
| STRONG DISLIKE | | → ________ ________ ________ ________ |
| HARD TO RATE | | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

BSCS Evaluation: EMH Feedback Form 1c

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is
☐ Of value--needs the revision suggested
☐ Worth salvaging--make major changes described
☐ Worthless --drop it

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Were any students unsuccessful in doing the experiment?
☐ No ☐ Yes: Why?

18. List the cleansing agents that were named most often by your students as most and Least effective in controlling microbes.
Most effective: 1 ____________ 2 ____________ 3 ____________ 4 ____________
named most often
Least effective: 1 ____________ 2 ____________ 3 ____________ 4 ____________
named most often

19. Concern (or questions) about content:

20. Messages for staff (read immediately):

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

UNIT II, CORE A
ACTIVITY 2-4: "Keep It Clean"

Teacher ________________

REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.
☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.

4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE A OBJECTIVES:

3. Appreciate that microbes are present everywhere.

4. Understand the need for cleanliness.

## MATERIALS

## TEACHING STRATEGIES

Activity 2-5. Microbes Are Everywhere

*In the next three activities students will further investigate how microbes can be found not only on them, but everywhere. They will again prepare petri dishes, but this time collect microbes from around the school building. Students should realize that places they think are clean have microbes on them. This is particularly important in job situations where the handling of food is involved, i.e., grocery stores, restaurants, hospitals, etc.*

Teacher Preparation:

Have water on to boil before class so that it will be available for agar preparation.

THIS ACTIVITY

rstand that the human body can be
lly affected by both living and
ving factors in the environment.

ze that he has some control over his
iate environment and can obtain a
er degree of well-being through
ious effort.

VES:

ciate that microbes are present
where.

rstand the need for cleanliness.

## ACHING STRATEGIES

robes Are Everywhere

*ctivities students will further*
*robes can be found not only on them,*
*ey will again prepare petri dishes,*
*ct microbes from around the school*
*should realize that places they think*
*obes on them. This is particularly*
*tuations where the handling of food*
*grocery stores, restaurants, hospitals,*

:

il before class so that it will be
preparation.

UNIT II. ME AS A HABITAT

CORE A. MICROBES AND ME

ACTIVITY 2-5. MICROBES ARE EVERYWHERE

BSCS

## ANTICIPATED STUDENT BEHAVIORS

*At the end of this activity, each student should:*

*--have prepared three agar plates.*
*--have collected microbes from three different locations.*
*--have incubated three plates for 24 hours.*
*--have compared microbe growth in plates collected from "dirty" versus "clean" locations.*
*--have inferred that microbes are found almost everywhere.*

ACTIVITY 2-5

(44)

## MATERIALS

*1 Quart (1000 ml) boiling water
Hot plate
*Masking tape
*Incubator box
2 Tablespoons nutrient agar
3 Sterile petri dishes per student
1 Beaker (100 ml) per student
Glass stirring rod
3 Sterile Q-tips per student
*Container to boil water

*Not furnished in materials kit

## TEACHING STRATEGIES

Begin by having students repeat the procedures of Activity 2-1 for preparing the agar dishes. Again, have each student prepare three dishes. The teacher should also prepare three dishes for purposes of comparison. When agar has been poured and is in the process of cooling, ask:

> WHERE HAVE WE FOUND MICROBES SO FAR?
>
> ARE THERE PLACES WHERE THERE ARE NO MICROBES?
>
> WHERE MIGHT WE GO AROUND THE SCHOOL AND NOT FIND MICROBES? WHERE ARE SOME REALLY CLEAN PLACES?
>
> ARE THERE ANY PLACES AROUND SCHOOL WHERE WE COULD FIND MORE MICROBES THAN WE DID ON OUR BODY?

Write suggested "clean" and "dirty" places on the chalkboard. Allow each student to select three places where he will go to collect microbes. Make sure that "clean" places are selected also.

> HERE ARE THREE AGAR DISHES I HAVE PREPARED. I AM GOING TO RUB TWO OF THEM WITH CLEAN Q-TIPS THAT I HAVEN'T TOUCHED TO ANYTHING ELSE. IF THESE Q-TIPS ARE CLEAN, WHAT DO YOU SUPPOSE WILL HAPPEN IN THESE DISHES?
>
> I AM GOING TO LEAVE ONE DISH CLOSED AND DO NOTHING TO IT. WHAT WILL HAPPEN TO IT?
>
> WHY?

| ACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| udents repeat the procedures of reparing the agar dishes. Again, have re three dishes. The teacher should dishes for purposes of comparison. poured and is in the process of cooling, | |
| FOUND MICROBES SO FAR? | --recall the places, mostly on the body, where they have collected and grown microbes. |
| CES WHERE THERE ARE NO MICROBES? | --respond, "Yes," "No," "I don't know." |
| E GO AROUND THE SCHOOL AND NOT ? WHERE ARE SOME REALLY CLEAN PLACES? | --suggest clean places around the school. |
| PLACES AROUND SCHOOL WHERE WE RE MICROBES THAN WE DID ON OUR | --suggest dirty places with a lot of microbes. |
| lean" and "dirty" places on the chalk- student to select three places where ect microbes. Make sure that "clean" d also. | |
| E AGAR DISHES I HAVE PREPARED. I UB TWO OF THEM WITH CLEAN Q-TIPS T TOUCHED TO ANYTHING ELSE. IF ARE CLEAN, WHAT DO YOU SUPPOSE N THESE DISHES? | --respond, "Nothing," "No microbes will grow." |
| LEAVE ONE DISH CLOSED AND DO . WHAT WILL HAPPEN TO IT? | --respond, "Nothing."<br>--should infer that since the dish has not been inoculated with microbes, nor opened accidentally, no microbes will grow. |

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | WE WILL LEAVE THESE DISHES HERE AND MARK ONE "NOTHING" AND THE OTHER TWO "CLEAN." LATER WE WILL COMPARE THESE WITH THE ONES YOU ARE GOING TO RUB WITH Q-TIPS AFTER TOUCHING DIFFERENT THINGS IN DIFFERENT PARTS OF THE SCHOOL. HOW DO YOU THINK THE DISHES WILL BE DIFFERENT?<br>WHAT SHOULD WE DO IF LOTS OF MICROBES GROW IN THE DISH WITH NOTHING IN IT? WHY?<br>WHAT SHOULD WE DO IF LOTS OF MICROBES GROW IN THE DISHES TOUCHED WITH CLEAN Q-TIPS? WHY?<br>IF MICROBES DO NOT GROW IN THESE THREE DISHES, BUT THEY DO GROW IN THE DISHES YOU RUB, WHERE CAN WE SAY THE MICROBES HAVE COME FROM?<br>Have students label their dishes with their names and the places where they will collect the microbes. Then allow students to take Q-tips and agar dishes and collect microbes from the places they selected. Caution them not to open the agar dishes too far or for more than a few seconds.<br>After returning, the students should tape the dishes shut and place them in the incubator. Allow the plates to incubate for 24 hours. |

## IG STRATEGIES

E DISHES HERE AND MARK ONE
THER TWO "CLEAN." LATER
SE WITH THE ONES YOU ARE
TIPS AFTER TOUCHING DIFFERENT
PARTS OF THE SCHOOL. HOW
SHES WILL BE DIFFERENT?

F LOTS OF MICROBES GROW IN
NG IN IT? WHY?

F LOTS OF MICROBES GROW IN
WITH CLEAN Q-TIPS? WHY?

GROW IN THESE THREE
GROW IN THE DISHES
WE SAY THE MICROBES

dishes with their names and the
llect the microbes. Then allow
nd agar dishes and collect
they selected. Caution them not
oo far or for more than a few

ients should tape the dishes shut
ubator. Allow the plates to

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond by predicting the untouched dishes will have few, if any, microbes in comparison to the other dishes.

--respond, "Start over," "There must have been microbes in the agar or the dish," "We can't tell if the area we tested had microbes or not because microbes were already in the dish."

--respond, "Start over," "The Q-tips must have had microbes on them already," "We can't tell if the area we tested had microbes or not."

--respond by indicating the microbes must come from the places touched by their Q-tips.

**MATERIALS**

**TEACHING STRATEGIES**

WORK TIME

WAIT FOR AT LEAST
BEFORE CONTINUING TH

Next day, have the students examine the dishes. Students should discover that the number of microbes does vary from place to place around the school and that all places probably have some microbes.

Then ask:

IN WHICH DISHES DO YOU FIND MICROBES GROWING?

WHERE DID YOU COLLECT THOSE MICROBES?

ARE ANY OF THESE PLACES ONES YOU CONSIDER TO BE DIRTY PLACES? WHICH ONES?

ARE ANY OF THESE PLACES ONES YOU CONSIDER TO BE CLEAN PLACES? WHICH ONES?

HOW MANY THAT YOU CONSIDERED CLEAN DID WE FIND TO BE FILLED WITH MICROBES?

DID WE FIND AS MANY MICROBES IN DIRTY PLACES?

| ACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| **WORK TIME** | |
| WAIT FOR AT LEAST 24 HOURS BEFORE CONTINUING THIS ACTIVITY | |
| students examine the dishes. Students t the number of microbes does vary from nd the school and that all places microbes. | |
| ES DO YOU FIND MICROBES GROWING? | --identify dishes in which microbe growth is apparent. |
| COLLECT THOSE MICROBES? | --look at their dishes and list the different places where growth occurred. |
| ESE PLACES ONES YOU CONSIDER TO ES? WHICH ONES? | --indicate which ones the students consider to be dirty. |
| ESE PLACES ONES YOU CONSIDER TO ES? WHICH ONES? | --indicate which ones the students consider to be clean. |
| YOU CONSIDERED CLEAN DID WE FIND WITH MICROBES? | --respond, "A lot." |
| S MANY MICROBES IN DIRTY PLACES? | --respond, "Yes," "No," "Maybe." |

## MATERIALS

## TEACHING STRATEGIES

WHERE DO WE FIND MICROBES?

WHY DON'T MICROBES GROW EVERYWHERE AS WELL AS THEY DO IN OUR DISHES?

> If students have trouble answering this, ask:
>
> ARE MICROBES ALIVE?
>
> WHAT DO ALL LIVING THINGS NEED?
>
> WHERE DO MICROBES GROW BEST?

WHAT IS IN THE DISHES THAT IS NOT IN THE OTHER PLACES?

WHY AREN'T MICROBES IN THE "CLEAN" DISHES?

HOW MIGHT WE CLEAN UP PLACES WHERE MICROBES GROW?

WHAT DOES THE SOAP AND WATER DO?

Dispose of or sterilize the agar and dishes as instructed in Activity 2-2.

| ACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| IND MICROBES? | --infer that microbes are found almost everywhere. |
| CROBES GROW EVERYWHERE AS WELL AS<br>R DISHES? | --conclude that microbes must have food and the proper temperature to grow. |
| ents have trouble answering this, ask: |  |
| ROBES ALIVE? |  |
| ALL LIVING THINGS NEED? |  |
| MICROBES GROW BEST? |  |
| HE DISHES THAT IS NOT IN THE OTHER | --recall that agar is moist and contains food. |
| ICROBES IN THE "CLEAN" DISHES? | --recall that the dishes were not touched or were touched with "clean" Q-tips, and therefore no microbes were put on the agar. |
| CLEAN UP PLACES WHERE MICROBES GROW? | --respond, "Soap and water," "Don't let food lie around," "Use cleaners that are good microbe fighters." |
| E SOAP AND WATER DO? | --infer that soap and water remove the food that microbes live on |
| ilize the agar and dishes as instructed |  |

UNIT II, CORE A
ACTIVITY 2-5: "Microbes Are Everywhere"

Teacher

Activity name suggested by class:

BSCS USE: Post ___ Tally ___ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) | |
|---|---|---|
| HIGH INTEREST | | → _______ _______ _______ _______ |
| MODERATE INTEREST | | |
| INDIFFERENCE | | |
| MODERATE RESISTANCE | | |
| STRONG DISLIKE | | → _______ _______ _______ _______ |
| HARD TO RATE | | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet # | Worksheet # | Worksheet # | Game # | Slides (show slide nos.) | Transparency # | Transparency # | Transparency # | Card(s) # | Tape(s) # | Other # |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile ☐ Of value--needs the ☐ Worth salvaging--make ☐ Worthless

|  | # | # | # | # | slide nos.) | # | # | # | # | # | # |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is |  |  |  |  |  |  |  |  |  |  |  |
| Revise slightly |  |  |  |  |  |  |  |  |  |  |  |
| Revise much |  |  |  |  |  |  |  |  |  |  |  |
| Worthless: omit |  |  |  |  |  |  |  |  |  |  |  |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:
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14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
    ☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed.
    What parts of this activity should be retained when the curriculum is revised?
    Page(s) ____________________:

17. What did students do while waiting to prepare agar plates and about how long did this take?

18. What did you do with the agar plates when you were done with them?
    (Have you ever tried to clean and reuse them?)

19. Concern (or questions) about content:

20. Messages for staff (read immediately):

BSCS Evaluation: EMH Feedback Form 1c

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

## UNIT II, CORE A
## ACTIVITY 2-5: "Microbes Are Everywhere"

Teacher ________________

### REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.

3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.

4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE A OBJECTIVES:

3. Appreciate that microbes are present everywhere.

4. Understand the need for cleanliness.

## MATERIALS

## TEACHING STRATEGIES

Activity 2-6. Drinking Microbes

*In this activity students will further investigate how microorganisms are found everywhere by determining the ability of various water samples to produce mold on bread. They will infer that if water will cause microbes to grow on bread, then the water itself must contain microbes. Students should conclude that tap water does not have nearly as many microorganisms as does ditch, pond, gutter, or puddle water; and that boiled water has few, if any.*

THIS ACTIVITY

rstand that the human body can be
ily affected by both living and
iving factors in the environment.

rehend the effects of certain elements
is environment (disease, drugs,
nol, and smoking) and some of their
al and psychological aspects.

ize that he has some control over his
diate environment and can obtain a
ter degree of well-being through
cious effort.

IVES:

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ywhere.

rstand the need for cleanliness.

**ACHING STRATEGIES**

king Microbes

*idents will further investigate how*
*ound everywhere by determining the*
*ater samples to produce mold on bread.*
*t if water will cause microbes to grow*
*ater itself must contain microbes.*
*clude that tap water does not have*
*organisms as does ditch, pond, gutter,*
*l that boiled water has few, if any.*

UNIT II. ME AS A HABITAT

CORE A. MICROBES AND ME

ACTIVITY 2-6. DRINKING MICROBES

BSCS

**ANTICIPATED STUDENT BEHAVIORS**

*At the end of this activity, each student should:*

*--have participated in collecting water for the class experiment.*

*--have participated in setting up three containers; one with tap water, one with water collected from another source such as a pond or ditch, and one with boiled water.*

*--have compared the growth of mold in water in the three containers.*

ACTIVITY 2-6

## MATERIALS

*1 Baby food jar or milk carton
(cut down to 1 1/2" high) per
student
*Saran Wrap
*Bread
*Masking tape for labeling and
sealing jars or milk cartons
*Incubator box
*Small jars with lids for student
water collections
1 Medicine dropper per student
*Boiling water
*Tap water
*Water collected from another
source

*Not furnished in materials kit

## TEACHING STRATEGIES

Teacher Preparation:

1. Have boiled water available the day the students prepare the specimens of water and bread.
2. It is important to stress to the students the need for cleanliness in this activity. The containers with bread and water should be kept sealed once they are prepared, and not opened again.

   To dispose of the bread and water containers, put them in a sack, and give them to the custodian with instructions that they be burned or buried. The students should be cautioned to wash their han thoroughly with soap and water, for there may be potentially dangerous microbes in the water sample
3. To avoid contaminating the experiment, sterilize the medicine droppers by removing the rubber bulb and boiling the glass tubes for ten minutes prior to the second day of this activity.
4. The medicine droppers should be collected, rubber bulbs removed, and glass tubes boiled immediately after they are used.

## HING STRATEGIES

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cimens of water and bread.

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in this activity.  The containers
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oppers by removing the rubber bulb
glass tubes for ten minutes prior
ay of this activity.

oppers should be collected, rubber
and glass tubes boiled immediately
used.

## ANTICIPATED STUDENT BEHAVIORS

--*have inferred that more microbes are present in ditch, pond, river, or lake water than in drinking water.*

--*have inferred that the presence of microbes in some sources of water makes them unsafe to drink or play in.*

--*have inferred that boiling water kills microbes.*

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | Part I. |

Begin by asking:

WHERE HAVE WE FOUND MICROBES SO FAR?

DO YOU THINK THERE ARE ALSO MICROBES IN WATER?

HOW COULD WE FIND OUT IF THERE ARE MICROBES IN WATER?

If students don't know how to find out, remind them how they found microbes on the body and around the school.

Students may suggest putting water samples on a dish of agar. This is a good experiment, and you can do it here if you don't mind making more agar dishes. Apply the water with a Q-tip as before. The experiment that is given here is just a slight variation in the way to grow microbes. By using bread, it is likely that students will get to see a mold for the first time.

Continue by asking:

WHERE COULD WE COLLECT SOME DIFFERENT KINDS OF WATER?

If students do not think of any place besides the drinking fountain or tap water, ask:

WHY DON'T WE DRINK WATER FROM THE (local) RIVER OR (local) LAKE?

DO YOU DRINK WATER FROM THE DITCH OR GUTTER?

| EACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| FOUND MICROBES SO FAR? | --recall earlier activities and respond, "On me and all over the school." |
| THERE ARE ALSO MICROBES IN WATER? | --respond, "Yes," "No," "I don't know." |
| FIND OUT IF THERE ARE MICROBES IN | --recall previous work and suggest an experiment of putting water in petri dishes with agar. |
| know how to find out, remind them how s on the body and around the school. | |
| st putting water samples on a dish of ood experiment, and you can do it here making more agar dishes. Apply the as before. The experiment that is a slight variation in the way to grow g bread, it is likely that students mold for the first time. | |
| : | |
| E COLLECT SOME DIFFERENT KINDS | --respond, "Drinking fountain," "Tap," "River," "Ditch." |
| t think of any place besides the drinking ater, ask: | |
| DRINK WATER FROM THE (local) cal) LAKE? | --respond, "It's dirty." |
| WATER FROM THE DITCH OR GUTTER? | --respond, "It's dirty," "No." |

ACTIVITY 2-6

52

| MATERIALS | TEACHING STRATEGIES |
|---|---|

Now explain to students that they will need to bring samples of water to class in order to do the next activity.

Divide the class up into teams of three students. (If one or two students are left over they can work with you as a team. Select those that need the most help to work on your team.)

Have the students suggest a variety of places they can get the water. List these suggestions on the chalkboard and assign a specific type of water to each team. To compensate for those who forget to bring in water samples, you should bring one or more types of water yourself.

Instruct the students how to collect the water. Distribute a clean baby food or other small jar with a lid to each student. Have each student write his name and source of water on tape and put the tape on the jar. Tell each of them to dip the jar into the water and screw the lid on tightly. Caution the students to wash their hands thoroughly after collecting the water and, if possible, to wear rubber gloves when collecting it, especially if the water is extremely dirty.

WAIT FOR AT LE
BEFORE CONTINUIN

Part II.

The next day, group the water samples on a table and ask:

HOW DO OUR WATER SAMPLES DIFFER?

## CHING STRATEGIES

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class in order to do the next activity.

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that need the most help to work on

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t the tape on the jar. Tell each of
nto the water and screw the lid on
e students to wash their hands thor-
ing the water and, if possible, to
hen collecting it, especially if the
irty.

WAIT FOR AT LEAST 24 HOURS
BEFORE CONTINUING THIS ACTIVITY

he water samples on a table and ask:

R SAMPLES DIFFER?

## ANTICIPATED STUDENT BEHAVIORS

Students:

--examine the containers and note any differences by making such statements as, "They are different colors," "They smell different," "Some have little things swimming in them," etc.

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | DO YOU THINK THERE ARE MORE MICROBES IN SOME SAMPLES THAN OTHERS?<br>HOW COULD WE SEE IF THERE ARE MORE MICROBES IN THE WATER YOU BROUGHT THAN IN THE WATER AT SCHOOL?<br>Then say:<br>THESE ARE ALL GOOD SUGGESTIONS. ANOTHER WAY TO CHECK WATER FOR MICROBES IS BY USING BREAD FOR MICROBE FOOD INSTEAD OF WATER. DO YOU THINK MICROBES NEED FOOD?<br>DO YOU THINK MICROBES WILL GROW ON BREAD?<br>WHAT DO WE CALL THE GREENISH COLORED STUFF YOU FIND ON BREAD IF IT'S VERY OLD OR HAS BEEN LEFT OUT?<br>MOLD IS A KIND OF MICROBE THAT COMMONLY GROWS ON FOODS.<br>Write "mold" on the chalkboard.<br>BREAD IS A FOOD. SO HOW DO YOU THINK WE COULD DISCOVER IF YOUR WATER HAS MICROBES IN IT? |

| ING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| E ARE MORE MICROBES IN SOME RS? | --relate the relationships between debris and growth of microorganisms and respond, "Yes, some are dirtier." |
| IF THERE ARE MORE MICROBES BROUGHT THAN IN THE WATER | --suggest culturing the petri dishes in the incubator. |
| D SUGGESTIONS. ANOTHER WAY R MICROBES IS BY USING BREAD INSTEAD OF WATER. DO YOU ED FOOD? | --respond, "Yes." |
| OBES WILL GROW ON BREAD? | --respond, "Yes," "No," "Maybe." |
| HE GREENISH COLORED STUFF IF IT'S VERY OLD OR HAS | --respond, "Mold." |
| MICROBE THAT COMMONLY GROWS | |
| alkboard. | |
| SO HOW DO YOU THINK WE YOUR WATER HAS MICROBES | --relate any past experiences with mold on bread and suggest, "Pour it on bread," or make any other suggestions. |

**MATERIALS**

**TEACHING STRATEGIES**

If students do not suggest putting water on the bre
ask:

IF WE PUT WATER FROM THE DRINKING FOUNTAIN ON THE BREAD, WOULD MOLD MICROBES START GROWING?

IF WE PUT SOME POND WATER ON THE BREAD AND MOL MICROBES START GROWING, WHERE WOULD THEY HAVE COME FROM?

Continue by saying:

TO SEE IF OUR WATER SAMPLES HAVE MICROBES IN THEM WE ARE GOING TO PUT ONE MEDICINE DROPPER FULL OF EACH WATER SAMPLE ON A PIECE OF BREAD.

WHAT WILL WE SEE HAPPEN IF THE WATER DOES HAVE MICROBES IN IT?

IF THE WATER HAS NO MICROBES IN IT WHAT WILL WE SEE?

HOW COULD WE GET WATER THAT WE WERE SURE HAD NO MICROBES IN IT?

WHAT WOULD HAPPEN IF YOU JUMPED INTO A SWIMMING POOL OF BOILING WATER?

COULD YOU LIVE FOR LONG IN BOILING WATER?

COULD MICROBES LIVE IN BOILING WATER?

NOTE: Most microbes are destroyed by boiling; howe
some bacterial spores may resist boiling.

| CHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| uggest putting water on the bread, | |
| FROM THE DRINKING FOUNTAIN ON<br>D MOLD MICROBES START GROWING? | --respond, "Yes," "No," "Maybe." |
| POND WATER ON THE BREAD AND MOLD<br>GROWING, WHERE WOULD THEY HAVE | --reply, "The dirty water." |
| ATER SAMPLES HAVE MICROBES IN<br>ING TO PUT ONE MEDICINE DROPPER<br>TER SAMPLE ON A PIECE OF BREAD. | |
| E HAPPEN IF THE WATER DOES<br>N IT? | --predict, "Mold will grow on the bread." |
| S NO MICROBES IN IT WHAT WILL | --predict that nothing will grow. |
| T WATER THAT WE WERE SURE HAD<br>IT? | --respond with a variety of suggestions. |
| EN IF YOU JUMPED INTO A<br>F BOILING WATER? | --respond, "You'd get burned," "You'd die," "You'd fry," "You'd boil." |
| FOR LONG IN BOILING WATER? | --respond, "No." |
| LIVE IN BOILING WATER? | --respond, "No." |
| s are destroyed by boiling; however,<br>l spores may resist boiling. | |

## MATERIALS

## TEACHING STRATEGIES

WHAT KIND OF WATER THEN SHOULD WE USE IF WE WANT NO MICROBES IN IT?

FOR OUR MICROBES-IN-WATER TEST, WE'LL USE THREE KINDS OF WATER: WATER FROM THE DRINKING FOUNTAIN, WATER FROM ANOTHER SOURCE, AND BOILED WATER.

Have the class move into their teams. Say:

ONE PERSON ON EACH TEAM WILL TEST THE WATER FROM THE DRINKING FOUNTAIN. ANOTHER PERSON ON THE TEAM WILL TEST THE WATER THAT WAS BROUGHT IN FROM ANOTHER SOURCE. THE THIRD PERSON ON THE TEAM WILL TEST BOILING WATER. DECIDE WHO ON YOUR TEAM WILL TEST WHAT.

Continue:

NOW TO TEST YOUR SAMPLE, HERE IS WHAT TO DO:

1. PLACE A 1/4 SLICE OF BREAD INTO YOUR CLEAN SMALL JAR OR MILK CARTON.
2. PUT A MEDICINE DROPPER FULL OF YOUR WATER SAMPLE ON THE BREAD.
3. LABEL YOUR CONTAINER WITH YOUR NAME AND THE SOURCE OF WATER.
4. COVER YOUR CONTAINER BY TAPING SARAN WRAP OVER IT.
5. PLACE IT IN THE INCUBATOR FOR SEVERAL DAYS.

List these five steps on the chalkboard.

**STRATEGIES**

HEN SHOULD WE USE IF WE
IT?

-WATER TEST, WE'LL USE
R:  WATER FROM THE DRINKING
ANOTHER SOURCE, AND

heir teams.  Say:

EAM WILL TEST THE WATER
UNTAIN.  ANOTHER PERSON
T THE WATER THAT WAS
THER SOURCE.  THE THIRD
ILL TEST BOILING WATER.
EAM WILL TEST WHAT.

MPLE, HERE IS WHAT TO DO:

CE OF BREAD INTO YOUR CLEAN
LK CARTON.

ROPPER FULL OF YOUR WATER
READ.

AINER WITH YOUR NAME AND
ATER.

AINER BY TAPING SARAN WRAP

INCUBATOR FOR SEVERAL DAYS.

he chalkboard.

**ANTICIPATED STUDENT BEHAVIORS**

Students:

--respond, "Boiled water."

ACTIVITY 2-6

**MATERIALS**

**TEACHING STRATEGIES**

After three days, or when there are obvious differences, ask:

> WHAT DIFFERENCES DO YOU SEE IN THE BREAD IN EACH OF THE THREE CONTAINERS?

Say:

> DECILE HOW MUCH MICROBE GROWTH OCCURRED IN EACH SAMPLE. USE THESE WORDS TO RATE MICROBE GROWTH IN EACH CONTAINER: NONE, VERY LITTLE, SOME, MUCH.

## STRATEGIES

WORK TIME

WAITING TIME

there are obvious differences,

YOU SEE IN THE BREAD IN
NTAINERS?

OBE GROWTH OCCURRED IN
ESE WORDS TO RATE MICROBE
INER: NONE, VERY LITTLE,

## ANTICIPATED STUDENT BEHAVIORS

Students:

--examine the cultures and respond, "The bread in ditch water is moldier (darker, etc.) than that in the tap water containers."

**MATERIALS**

**TEACHING STRATEGIES**

When the teams have decided how to rate each sample, make the following chart on the chalkboard and have each student report the rating for his sample.

| | Water Fountain | Other Source | Boiled Water |
|---|---|---|---|
| Team 1 | | | |
| Team 2 | | | |
| Team 3 | | | |
| Team 4 | | | |
| Team 5 | | | |

WHAT DOES THIS TELL YOU ABOUT THE DITCH WATER?

WHAT DOES THIS TELL YOU ABOUT BOILED WATER?

WHY SHOULDN'T YOU DRINK LAKE, RIVER, OR DITCH WATER?

## CHING STRATEGIES

decided how to rate each sample, make
on the chalkboard and have each
rating for his sample.

| ter<br>untain | Other Source | Boiled Water |
|---|---|---|
| | | |

TELL YOU ABOUT THE DITCH WATER?

TELL YOU ABOUT BOILED WATER?

YOU DRINK LAKE, RIVER, OR

## ANTICIPATED STUDENT BEHAVIORS

Students:

--infer that ditch water has more microbes in it.

--infer that boiled water kills microbes and therefore has fewer microbes in it.

--respond, "Some of these microbes may be harmful."

UNIT II, CORE A
ACTIVITY 2-6: "Drinking Microbes"

Activity name suggested by class:

Teacher
BSCS USE: Post ___ Tally ___ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) | |
|---|---|---|
| HIGH INTEREST | | → ______ ______ ______ ______ |
| MODERATE INTEREST | | |
| INDIFFERENCE | | |
| MODERATE RESISTANCE | | |
| STRONG DISLIKE | | → ______ ______ ______ ______ |
| HARD TO RATE | | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problems:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

| | # | # | # | # | slide nos.) | # | # | # | # | # | # |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

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10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:

| | | | |
|---|---|---|---|
| ☐ Worthwhile<br>--keep as is | ☐ Of value--needs the<br>revision suggested | ☐ Worth salvaging--make<br>major changes described | ☐ Worthless<br>--drop it |

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed.
What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Did some of the students use agar plates for the experiment?
☐ No ☐ Yes: Comment.

18. Did any students have difficulty rating the amount of microbial growth?
☐ No ☐ Yes: How many? ☐ 1/4 ☐ 1/2 ☐ 3/4

19. Concern (or questions) about content:

20. Messages for staff (read immediately):

BSCS Evaluation: EMH Feedback Form 1c

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

UNIT II, CORE A
ACTIVITY 2-6: "Drinking Microbes"

Teacher ______________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

Me and my Environment

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.

3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.

CORE A OBJECTIVES:

3. Appreciate that microbes are present everywhere.

4. Understand the need for cleanliness.

## MATERIALS

2 Erlenmeyer flasks
2 Corks (one-hole) to fit flasks
Straight glass tubing
S-shaped glass tubing

(Continued on next page)

## TEACHING STRATEGIES

### Activity 2-7. Skydiving Microbes

*In this activity the idea will be reinforced that microbes are killed by boiling. Students will also conclude that microbes are found in air and will contaminate food if not covered.*

Teacher Preparation:

1. Before class prepare three flasks with about 1/2 inch of agar in the bottom, a flask with S-shaped tubing, a flask with straight tubing, and a flask with no stopper or tubing. See Diagram 2-4.

FOR THIS ACTIVITY

:

nderstand that the human body can be
itally affected by both living and
onliving factors in the environment.

omprehend the effects of certain elements
n his environment (disease, drugs,
lcohol, and smoking) and some of their
ocial and psychological aspects.

JECTIVES:

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verywhere.

nderstand the need for cleanliness.

UNIT II. ME AS A HABITAT

CORE A. MICROBES AND ME

ACTIVITY 2-7. SKYDIVING MICROBES

BSCS

**TEACHING STRATEGIES**

Skydiving Microbes

*ty the idea will be reinforced that*
*illed by boiling. Students will also*
*icrobes are found in air and will*
*od if not covered.*

ation:

lass prepare three flasks with about 1/2
agar in the bottom, a flask with S-shaped
a flask with straight tubing, and a flask
stopper or tubing. See Diagram 2-4.

**ANTICIPATED STUDENT BEHAVIORS**

*At the end of this activity, each student should:*

- *have observed the slide sequence and participated in discussion of it.*
- *have observed the flask-tubing demonstration.*
- *have concluded that microbes are present in the air and may travel to other things if precautions are not taken.*

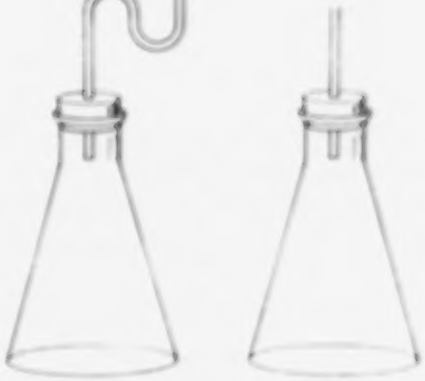
ACTIVITY 2-7

(60)

## MATERIALS

Slides 2-8 through 2-11
Glass beads to go through tubing
*35mm Slide projector
*Glycerine or soap

Diagram 2-4



*Not furnished in materials kit

## TEACHING STRATEGIES

When inserting the glass tubing through the rubber stopper BE SURE TO LUBRICATE THE HOLE IN THE RUBBER STOPPER WITH GLYCERIN. This will enable the tubing to slide through more easily. If this is not done, the tubing may break while being forced through the cork.

2. Set up the slide projector.

Begin with a short review of the previous activities by saying:

LET'S LIST THE PLACES WHERE WE'VE FOUND MICROBES.

(Student's name), CAN YOU THINK OF ONE PLACE WHERE MICROBES LIVE?

WHAT DO YOU CALL THE PLACE WHERE SOMETHING LIVES?

Compare "home" and "habitat." Note that we live in many styles of "homes" but as part of a habitat they all provide the same conditions: shelter, the right temperature, a place to eat and rest and be undisturbed (to some degree). A habitat is the whole neighborhood, including the sources of all the life needs. Sometimes it covers a wide range of places.

GOOD. (Student's name), CAN YOU THINK OF ANOTHER?

Continue this line of questioning, including as many students as possible, until the human body, places in the school building, and water are mentioned.

| HING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| he glass tubing through the rubber TO LUBRICATE THE HOLE IN THE RUBBER CERIN. This will enable the tubing more easily. If this is not done, reak while being forced through the | |
| projector. | |
| view of the previous activities by | |
| LACES WHERE WE'VE FOUND MICROBES. | |
| ), CAN YOU THINK OF ONE PLACE IVE? | --respond with, "People," "Everywhere," "Water," "Buildings." |
| THE PLACE WHERE SOMETHING | --respond, "Home," "Habitat." |
| habitat." Note that we live in many t as part of a habitat they all ditions: shelter, the right tempera- and rest and be undisturbed (to itat is the whole neighborhood, s of all the life needs. Sometimes it of places. | |
| 's name), CAN YOU THINK OF ANOTHER? | --suggest another place where microbes live. |
| f questioning, including as many , until the human body, places in the water are mentioned. | |

## MATERIALS

## TEACHING STRATEGIES

**GIVE SEVER**
**STUDENTS A C**
**TO RESPO**

Then say:

WE HAVE FOUND MICROBES ON OUR BODIES, IN WATER, AND AROUND THE SCHOOL. WHAT ABOUT AIR?

AIR IS ALL AROUND US. DO YOU THINK THERE ARE MICROBES IN THE AIR?

LET'S SEE IF WE CAN FIND OUT.

Hold up the flask with no stopper.

Say:

SUPPOSE I SET THIS BOTTLE OF AGAR ON THE TABLE AND LEAVE IT FOR 24 HOURS. WOULD DOING THIS SHOW US THAT THERE ARE MICROBES IN THE AIR?

(Student's name), WHY DO YOU SAY THAT?

Have several students explain their responses if you get different answers. Encourage discussion. If no one suggests that microbes might already be in the bottle, say:

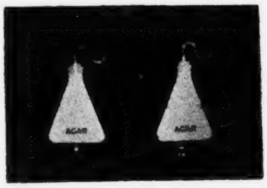
COULD MICROBES BE IN THE BOTTLE?

GIVE SEVERAL STUDENTS A CHANCE TO RESPOND

| NG STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| OBES ON OUR BODIES, IN WATER, OOL. WHAT ABOUT AIR? | |
| S. DO YOU THINK THERE ARE R? | --respond, "Yes," "No," "Maybe." |
| N FIND OUT. | |
| o stopper. | |
| BOTTLE OF AGAR ON THE FOR 24 HOURS. WOULD THAT THERE ARE MICROBES | --respond, "Yes," "No," "Maybe." |
| HY DO YOU SAY THAT? | --explain the reason for his answer. |
| xplain their responses if you get ourage discussion. If no one ight already be in the bottle, | |
| N THE BOTTLE? | --respond, "Yes," "No," "Maybe." |

## MATERIALS

Slide 2-8



## TEACHING STRATEGIES

Say:

> SINCE WE AREN'T SURE IF THERE ARE MICROBES IN THE BOTTLE, HOW CAN WE KILL ANY MICROBES THAT MAY PERHAPS BE THERE?

Proper food storage, covering the face when sneezing, and scrubbing floors are just a few of the applications that stem from knowing about microbes in the air. Go through this slide sequence very slowly, making sure students understand each part before going on to the next.

Begin by showing Slide 2-8 and saying:

> THESE ARE GOOD IDEAS. LET'S LOOK AT SOME SLIDES WHICH SHOW HOW A SCIENTIST TRIED TO MAKE SURE THERE WERE NO MICROBES IN THE BOTTLE. HERE ARE TWO BOTTLES. WHAT DO YOU THINK IS AT THE BOTTOM OF BOTH BOTTLES?
>
> YES, IT'S AGAR. (Student's name), CAN YOU POINT TO THE AGAR IN BOTH BOTTLES?

Say:

> DESCRIBE WHAT THE SCIENTIST PUT IN THE TOP OF BOTTLE 1.
>
> YES, HE PUT A CURVED GLASS STRAW THROUGH A CORK AND PUT IT IN THE TOP OF THE BOTTLE. THIS IS WHAT THE BOTTLE LOOKED LIKE.

Pass around the bottle you prepared with the curved tube stopper.

| EACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| N'T SURE IF THERE ARE MICROBES E, HOW CAN WE KILL ANY MICROBES HAPS BE THERE? | --respond, "Boil the agar," "Use a microbe fighter," "Don't know." |
| ge, covering the face when sneezing, and are just a few of the applications that about microbes in the air. Go through ce very slowly, making sure students art before going on to the next. |  |
| Slide 2-8 and saying: |  |
| DD IDEAS. LET'S LOOK AT SOME SLIDES OW A SCIENTIST TRIED TO MAKE SURE O MICROBES IN THE BOTTLE. HERE ARE WHAT DO YOU THINK IS AT THE BOTTOM LES? | --respond, "Water," "Agar." |
| AR. (Student's name), CAN YOU POINT IN BOTH BOTTLES? | --student points to agar. |
| T THE SCIENTIST PUT IN THE TOP | --respond, "A tube," "A cork," "A funny looking straw," "Don't know." |
| A CURVED GLASS STRAW THROUGH A IT IN THE TOP OF THE BOTTLE. THE BOTTLE LOOKED LIKE. |  |
| ottle you prepared with the curved tube |  |

**MATERIALS**

**TEACHING STRATEGIES**

Ask:

WHAT DID THE SCIENTIST PUT IN THE TOP OF BOTTLE 2?

ARE THE GLASS STRAWS COVERED?

THE SCIENTIST THEN BOILED THE AGAR IN BOTTLE 1.

Point to Bottle 1.

HE DID NOT BOIL BOTTLE 2. NEXT, HE PUT BOTH BOTTLES IN AN INCUBATOR, LIKE THE ONE WE HAVE USED, FOR 24 HOURS.

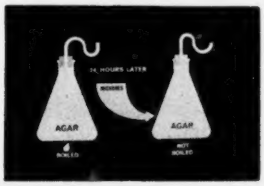
Ask:

WHAT ARE ALL THE DIFFERENCES BETWEEN BOTTLE 1 AND BOTTLE 2?

Say:

THERE WAS ONLY ONE DIFFERENCE. BOTTLE 1 WAS BOILED BUT BOTTLE 2 WAS NOT BOILED.

Slide 2-9



Project Slide 2-9 and say:

LOOK AT THE BOTTLES NOW. WHAT WAS DIFFERENT AFTER 24 HOURS?

WHY DID MICROBES GROW IN BOTTLE 2 AND NOT IN BOTTLE 1?

## HING STRATEGIES

ENTIST PUT IN THE TOP OF

RAWS COVERED?

EN BOILED THE AGAR IN BOTTLE 1.

BOTTLE 2. NEXT, HE PUT BOTH
CUBATOR, LIKE THE ONE WE HAVE
RS.

DIFFERENCES BETWEEN BOTTLE 1

NE DIFFERENCE. BOTTLE 1 WAS
E 2 WAS NOT BOILED.

say:

LES NOW. WHAT WAS DIFFERENT

GROW IN BOTTLE 2 AND NOT

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond, "A curved glass straw through a cork."

--inspect the bottle and straw and respond, "No."

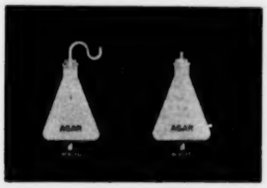
--respond, "The agar in Bottle 1 was boiled, but the agar in Bottle 2 was not boiled."

--respond, "Microbes are growing in one."

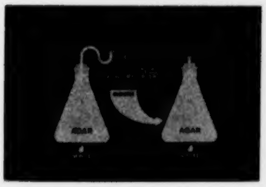
--note the different condition each bottle was originally subjected to, recall discussion of boiling water in Activity 2-6, and state, "Bottle 2 didn't get boiled."

## MATERIALS

Slide 2-10



Slide 2-11



## TEACHING STRATEGIES

Say:

> BOILING KILLED THE MICROBES IN BOTTLE 1. WHERE DID THE MICROBES IN BOTTLE 2 COME FROM?
>
> WHAT DID THE SCIENTIST FIND OUT IN THIS EXPERIMENT?

Now show Slide 2-10 and point to the agar in Bottle 3.

Say:

> THE SCIENTIST THEN TOOK ANOTHER BOTTLE AND POURED AGAR INTO IT.
>
> HE PUT A STRAIGHT GLASS STRAW THROUGH A CORK AND PUT IT IN THE TOP OF THE BOTTLE. THIS IS THE WAY IT LOOKED.

Pass around the bottle you prepared with the cork and straight glass tube.

> NEXT THE SCIENTIST BOILED THE BOTTLE JUST AS HE DID BOTTLE 1, AND PUT IT INTO THE INCUBATOR FOR 24 HOURS.

Point to Bottle 1.

Project Slide 2-11 and say:

> HOW ARE BOTTLE 1 AND BOTTLE 3 ALIKE?
>
> HOW ARE BOTTLE 1 AND BOTTLE 3 DIFFERENT?

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| LLED THE MICROBES IN BOTTLE 1.<br>HE MICROBES IN BOTTLE 2 COME | --respond, "They must have already been in the bottle or in the agar." |
| E SCIENTIST FIND OUT IN THIS<br>? | --respond, "Boiling kills microbes." |
| -10 and point to the agar in Bottle 3. | |
| IST THEN TOOK ANOTHER BOTTLE AND<br>R INTO IT. | |
| RAIGHT GLASS STRAW THROUGH A CORK<br>IN THE TOP OF THE BOTTLE. THIS<br>IT LOOKED. | |
| bottle you prepared with the cork and<br>ube. | |
| CIENTIST BOILED THE BOTTLE JUST AS HE<br>1, AND PUT IT INTO THE INCUBATOR FOR | |
| 1. | |
| -11 and say: | |
| TTLE 1 AND BOTTLE 3 ALIKE? | --respond, "They both got boiled," "Both have agar," "Both have a cork." |
| TTLE 1 AND BOTTLE 3 DIFFERENT? | --respond, "Bottle 3 has microbes," "Bottle 3 has a straight straw." |

## MATERIALS

## TEACHING STRATEGIES

IF BOILING KILLS MICROBES, WHY ARE THERE MICROBES GROWING IN BOTTLE 3?

WHERE DID THE MICROBES COME FROM?

WHY DIDN'T MICROBES FALL INTO BOTTLE 1?

If students don't know, ask:

WHAT WAS DIFFERENT ABOUT THE TWO BOTTLES?

WHERE DID THE FALLING MICROBES GO IN BOTTLE 1?

WHAT DID THE SCIENTIST FIND OUT IN THIS EXPERIMENT?

Hold up a flask with straight glass tubing and as you drop a glass bead into the tubing say:

PRETEND THIS LITTLE BEAD IS A MICROBE IN THE AIR.

Drop the "microbe" down the tubing into the flask.

DID THE MICROBE GET INTO THE BOTTLE?

HOW DID IT GET IN?

Hold up a flask with S-shaped tubing and drop a glass bead down the tubing.

| NG STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| ICROBES, WHY ARE THERE<br>N BOTTLE 3? | --respond, "They fell down the tube into the bottle." |
| OBES COME FROM? | --respond, "The air," "I don't know." |
| S FALL INTO BOTTLE 1? | --respond, "The straw was bent," "The straw was crooked." |
| on't know, ask: | |
| ERENT ABOUT THE TWO BOTTLES? | --respond, "The crooked straw." |
| LING MICROBES GO IN | --indicate first curve. |
| TIST FIND OUT IN THIS | --respond, "There are microbes in the air," "Microbes can fall into things if they are open," "Microbes can't crawl around corners." |
| raight glass tubing and as you the tubing say: | |
| LE BEAD IS A MICROBE | |
| the tubing into the flask. | |
| T INTO THE BOTTLE? | --respond, "Yes." |
| | --respond, "You dropped it," "It fell in." |
| shaped tubing and drop a glass | |

**MATERIALS**

**TEACHING STRATEGIES**

Ask:

DID THE MICROBE GET INTO THE BOTTLE?

WHY DIDN'T IT GET INTO THE BOTTLE?

WHY DIDN'T THE REAL MICROBES GET INTO THE BOTTLE?

WHERE DID THE FALLING MICROBES GO IN BOTTLE 1?

DID THEY STAY IN THE TUBE?

HOW DO YOU KNOW?

THE SCIENTIST TRIED ANOTHER BOTTLE. HE FILLED IT WITH AGAR AND BOILED IT BUT DIDN'T PUT A CORK IN THE BOTTLE? IT LOOKED LIKE THIS.

Pass around the bottle you prepared without a cork.

WHAT DO YOU THINK HAPPENED?

At this point show the sequence of four slides again.
various students to tell about each slide. Involve a
many students as possible. Be sure to ask the follow
questions:

| HING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| GET INTO THE BOTTLE? | --respond, "No." |
| T INTO THE BOTTLE? | --respond, "The tube was crooked." |
| EAL MICROBES GET INTO THE | --respond, "The tube was crooked." |
| ALLING MICROBES GO IN BOTTLE 1? | --indicate the first curve. |
| THE TUBE? | --indicate, "Yes." |
| ? | --respond, "None grew on the agar." |
| RIED ANOTHER BOTTLE. HE FILLED<br>D BOILED IT BUT DIDN'T PUT A CORK<br>IT LOOKED LIKE THIS. | |
| le you prepared without a cork. | |
| NK HAPPENED? | --respond, "Microbes fell into the bottle and grew on the agar." |
| he sequence of four slides again. Ask<br>tell about each slide. Involve as<br>sible. Be sure to ask the following | |

**ASK FOR OTHER IDEAS**

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | Slide 2-8. WHAT WAS THE QUESTION THE SCIENTIST WANTED TO ANSWER IN HIS EXPERIMENTS? |
| | WHY DID THE SCIENTIST DO IT IN THIS WAY? |
| | WHAT WAS THE DIFFERENCE BETWEEN THE TWO FLASKS? |
| | Slide 2-9. WHAT HAPPENED IN THIS EXPERIMENT 24 HOURS LATER? |
| | WHAT DID THE SCIENTIST LEARN FROM THIS EXPERIMENT? |
| | Slide 2-10. WHY DID THE SCIENTIST DO THIS EXPERIMENT? |
| | WHAT WAS THE DIFFERENCE BETWEEN THE TWO FLASKS IN THIS EXPERIMENT? |
| | Slide 2-11. WHAT HAPPENED IN THIS EXPERIMENT? |
| | WHAT DID THE SCIENTIST LEARN FROM THIS EXPERIMENT? |
| | DID THE SCIENTIST GET AN ANSWER TO THE QUESTION HE STARTED WITH? |
| | WHAT WAS HIS QUESTION? |

| EGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| THE SCIENTIST WANTED<br>RIMENTS? | --respond, "Are there microbes in the air?" |
| DO IT IN THIS WAY? | --respond, "To find out if microbes would grow in boiled agar." |
| CE BETWEEN THE TWO | --respond, "Bottle 2 was not boiled." |
| EXPERIMENT 24 HOURS | --respond, "Microbes grew in the bottle that was not boiled." |
| T LEARN FROM THIS | --respond, "Boiling kills microbes that are present." |
| DO THIS EXPERIMENT? | --respond, "To find out if there are microbes in the air that can get into the bottles." |
| NCE BETWEEN THE TWO<br>MENT? | --observe and respond, "There is a straight glass tube in Bottle 3." |
| EXPERIMENT? | --observe and respond, "Microbes grew in the bottle with the straight glass tube." |
| T LEARN FROM | --observe and infer, "Microbes can fall from the air through a straight tube into a bottle." |
| SWER TO THE | --respond, "Yes." |
| | --respond, "Are there microbes in the air?" |

| MATERIALS | TEACHING STRATEGIES |
|---|---|
|  | WHAT WAS HIS ANSWER?<br>EXPLAIN HOW HE CAME TO THAT CONCLUSION?<br>WHAT DID THE SCIENTIST LEARN BY DOING BOTH EXPERIMENTS?<br>WHERE DID THESE MICROBES COME FROM?<br>WHY SHOULD YOU COVER LEFTOVER FOOD THAT YOU PLAN TO EAT LATER?<br>WHY SHOULD YOU COVER YOUR FACE WHEN SNEEZING OR COUGHING?<br>IF YOU HAD WATER IN AN OPEN CONTAINER WOULD MICROBES GET INTO IT?<br>WHAT COULD YOU DO TO MAKE THE WATER SAFER TO DRINK?<br>WHAT WILL BOILING DO TO THE WATER? |

| ATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
|  | --conclude and respond, "Yes, there are microbes in the air." |
| NT CONCLUSION? | --respond, "There must be microbes in the air because some fell down the straight tube." |
| ARN BY DOING BOTH | --respond, "Boiling agar kills microbes but it won't keep them from growing if there is a way for them to get in after it is boiled." |
| COME FROM? | --recall, "The air." |
| OVER FOOD THAT YOU | --apply this information to their own actions and respond, "To keep the microbes off." |
| R FACE WHEN SNEEZING | --conclude that their microbes could get on food or other people. |
| PEN CONTAINER WOULD | --respond, "Yes," "They'd drop in." |
| E THE WATER SAFER | --respond, "Boil it." |
| THE WATER? | --respond, "Kill the microbes." |

UNIT II, CORE A
ACTIVITY 2-7: "Skydiving Microbes"

Teacher

Activity name suggested by class:

BSCS USE: Post ____ Tally ____ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) | |
|---|---|---|
| HIGH INTEREST | | → ________ ________ ________ ________ |
| MODERATE INTEREST | | |
| INDIFFERENCE | | |
| MODERATE RESISTANCE | | |
| STRONG DISLIKE | | → ________ ________ ________ ________ |
| HARD TO RATE | | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet # | Worksheet # | Worksheet # | Game # | Slides (show slide nos.) | Transparency # | Transparency # | Transparency # | Card(s) # | Tape(s) # | Other # |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

8. Materials used:

| | Worksheet # | # | # | Game # | Slides (show slide nos.) | Transparency # | # | # | Card(s) # | Tape(s) # | Other # |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is
☐ Of value--needs the revision suggested
☐ Worth salvaging--make major changes described
☐ Worthless --drop it

---

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed.
What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Were any students confused by slides?
☐ No ☐ Yes: How many? ☐ 1/4 ☐ 1/2 ☐ 3/4 Comment:

18. Did you involve all students in describing slides and explaining these experiments?
☐ Yes ☐ No: If not, why not?

19. Concern (or questions) about content:

20. Messages for staff (read immediately):

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

BSCS Evaluation: EMH Feedback Form 1c

UNIT II, CORE A
ACTIVITY 2-7: "Skydiving Microbes"

Teacher ______________

REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

1. Recognize the world of microbes as a part of the world of living things.
2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.
3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.
4. Realize that he has some control over his environment and can obtain a greater degree of well-being through conscious effort.

CORE A OBJECTIVES:

1. Realize that many living components of the environment are too small to be seen with the unaided eye.
2. Realize that people are habitats for microbes.
3. Appreciate that microbes are present everywhere.
4. Understand the need for cleanliness.

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | Activity 2-8. Review of Success<br>*The purpose of this activity is to assess the students' comprehension of the concepts in this core. This will be accomplished through three questions and the construction of one poster.* |

IS ACTIVITY

e the world of microbes as a part
orld of living things.

nd that the human body can be
affected by both living and
g factors in the environment.

nd the effects of certain elements
nvironment (disease, drugs,
and smoking) and some of their
nd psychological aspects.

that he has some control over his
ent and can obtain a greater degree
being through conscious effort.

:

that many living components of the
ent are too small to be seen with
ded eye.

that people are habitats for
.

te that microbes are present
re.

nd the need for cleanliness.

## HING STRATEGIES

of Success

*tivity is to assess the students'*
*oncepts in this core. This will*
*h three questions and the construc-*

UNIT II. ME AS A HABITAT

CORE A. MICROBES AND ME

ACTIVITY 2-8. REVIEW OF SUCCESS

BSCS

## ANTICIPATED STUDENT BEHAVIORS

*At the end of this activity, each student should:*

- *--have filled out Worksheet 2-13 and defended his answers to the questions.*
- *--have successfully completed making one of two posters.*

## MATERIALS

*Butcher paper or tagboard
*Magazines and/or catalogs
*Scissors
*Crayons
*Colored pencils
*Paste or glue
Worksheet 2-3
Slides 2-12 and 2-13
*35mm Slide projector

Slide 2-12

Slide 2-13

*Not furnished in materials kit

## TEACHING STRATEGIES

Part I.

TODAY LET'S THINK ABOUT SOME OF THE THINGS WE HAVE LEARNED ABOUT MICROBES. I WILL HAND OUT A WORKSHEET AND READ SEVERAL QUESTIONS TO YOU. WHEN I READ THEM, MARK WHAT YOU THINK IS THE BEST ANSWER. WE WILL TALK ABOUT THEM AFTER WE HAVE FINISHED THE WORKSHEET. ARE THERE ANY QUESTIONS?

Distribute Worksheet 2-3 containing two questions about microbes and have students put their names and the date on it.

Project each question separately. Read the question and choices aloud to the students. Read the item a second time, allowing ample time for them to mark their worksheets. Repeat this procedure for the next questions. Make sure students are marking the question that is being projected each time.

After all students have had the opportunity to answer all of the questions, collect the worksheets. Then project each slide (2-12 and 2-13) and discuss the answers with them. (Refer to Tallysheet 2-2 for the correct answers.) Have them defend their choices. After class, tally the students' answers on Tallysheet 2-2. Consider whether the whole class needs further review or if a few individuals need special attention.

After discussion of the questions, proceed to the next part.

Part II.

For the poster activity, take some time to emphasize the importance of thinking of ideas before beginning work and of planning what materials will be needed. If students are unfamiliar with this type of activity, you may wish to illustrate by asking the following sequence of questions.

## EACHING STRATEGIES

HINK ABOUT SOME OF THE THINGS
NED ABOUT MICROBES. I WILL HAND
EET AND READ SEVERAL QUESTIONS
N I READ THEM, MARK WHAT YOU THINK
ANSWER. WE WILL TALK ABOUT THEM
E FINISHED THE WORKSHEET. ARE
ESTIONS?

eet 2-3 containing two questions about
students put their names and the date

tion separately. Read the question and
the students. Read the item a second
ple time for them to mark their work-
his procedure for the next questions.
s are marking the question that is being
ne.

s have had the opportunity to answer all
collect the worksheets. Then project
and 2-13) and discuss the answers with
Tallysheet 2-2 for the correct answers.)
their choices. After class, tally the
on Tallysheet 2-2. Consider whether the
further review or if a few individuals
ntion.

of the questions, proceed to the next

tivity, take some time to emphasize the
nking of ideas before beginning work and
materials will be needed. If students
th this type of activity, you may wish to
ing the following sequence of questions.

## ANTICIPATED STUDENT BEHAVIORS

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | Say: |

HAVE YOU EVER BAKED A CAKE OR MADE A MODEL CAR?

DID YOU HAVE TO DECIDE WHAT KIND OF CAKE OR WHAT KIND OF CAR YOU WERE GOING TO MAKE BEFORE STARTING?

DID YOU HAVE TO DECIDE WHAT YOU WOULD NEED BEFORE STARTING?

Say:

THE NEXT THING YOU ARE GOING TO DO IS TO MAKE A POSTER. YOU WILL NEED TO THINK OF WHAT WILL BE ON THE POSTER AND WHAT YOU WILL NEED TO MAKE THE PICTURE BEFORE YOU BEGIN WORKING, JUST AS YOU HAVE DONE WHEN YOU BAKED A CAKE OR MADE A MODEL CAR.

AS I EXPLAIN THE CHOICES FOR MAKING A POSTER, BE THINKING OF IDEAS AND DECIDING ON WHICH POSTER YOU WOULD LIKE TO MAKE.

Write the two topics "How To Control Microbes" and "Places That Microbes Live" on the chalkboard as you introduce them.

Have large pieces of butcher paper or tagboard, scissors, magazines or catalogs, crayons, colored pencils, glue or paste available. Instruct each student to make one poster. The student will have a choice from two topics for the poster. One is "How To Control Microbes" and should include several pictures or drawings depicting the ways they have learned that microbes can be controlled. Encourage students to include all of the ways they know, but do not suggest specific ways.

## NG STRATEGIES

D A CAKE OR MADE A MODEL CAR?

CIDE WHAT KIND OF CAKE OR WHAT
RE GOING TO MAKE BEFORE

CIDE WHAT YOU WOULD NEED

ARE GOING TO DO IS TO
U WILL NEED TO THINK OF
E POSTER AND WHAT YOU
THE PICTURE BEFORE YOU
T AS YOU HAVE DONE WHEN
R MADE A MODEL CAR.

HOICES FOR MAKING A POSTER,
AS AND DECIDING ON WHICH
IKE TO MAKE.

w To Control Microbes" and
ive" on the chalkboard as you

tcher paper or tagboard, scissors,
crayons, colored pencils, glue
struct each student to make one
ll have a choice from two topics
"How To Control Microbes" and
pictures or drawings depicting the
that microbes can be controlled.
nclude all of the ways they know,
ific ways.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--should indicate their past experience.

--should indicate what they did.

--will probably say, "Yes."

ACTIVITY 2-8

(72)

**MATERIALS**

**TEACHING STRATEGIES**

The second topic is "Places That Microbes Live" and shoul include several pictures or drawings of places that students have learned microbes could easily live. Tell students they may use pictures cut from the magazines or catalogs for their posters, draw their own pictures, or include cutouts, drawings, and a photograph. Encourage students to include all the places they know, but do not suggest specific places.

If the student has grasped the concepts in this unit, th first poster "How To Control Microbes" should include pictures or drawings representing at least three of thes microbe controllers:

1. Soap and water
2. Cleaners or disinfectants
3. Boiling water
4. Covering food
5. Covering your mouth when sneezing or coughing

The second poster "Places That Microbes Live" should include pictures or drawings representing at least the first three or four of these habitats:

1. People
2. Air
3. Water
4. School
5. Food
6. Places in school
7. Any other logical place.

## EACHING STRATEGIES

is "Places That Microbes Live" and should
pictures or drawings of places that
arned microbes could easily live.  Tell
y use pictures cut from the magazines or
ir posters, draw their own pictures, or
drawings, and a photograph.  Encourage
ude all the places they know, but do not
places.

as grasped the concepts in this unit, the
w To Control Microbes" should include
ings representing at least three of these
ers:

d water

s or disinfectants

water

g food

g your mouth when sneezing or coughing

r "Places That Microbes Live" should
or drawings representing at least the
our of these habitats:

in school

er logical place.

## ANTICIPATED STUDENT BEHAVIORS

| MATERIALS | TEACHING STRATEGIES | A |
|---|---|---|
|  | The criteria for rating the posters are on the tallysheet.<br>If by looking at the students' posters you see that the majority of them have not grasped the concepts introduced in this core, go back and review, especially Activities 2-1, 2-2, 2-4, and 2-5. If you notice by his poster that a student is having difficulty, review individually with him before proceeding. |  |

## ACHING STRATEGIES

ating the posters are on the tallysheet.

he students' posters you see that the
ave not grasped the concepts introduced
ack and review, especially Activities
2-5. If you notice by his poster that
difficulty, review individually with
ing.

## ANTICIPATED STUDENT BEHAVIORS

Teacher ____________________

Date ____________________

## UNIT II, CORE A
## TALLYSHEET 2-2: Responses To Worksheet 2-3 And Poster Ratings
## Activity 2-8: "Microbe Habitats And Control: Review Of Success"

### Responses to Worksheet 2-3

Use the form on the back to record the responses from student Worksheet 2-3 by circling their response(s) beside the ID number. For question 1, "Why do microbes like you?" the best answer would be to mark both B (warmth) and D (food and water). For question 2, microbes might have grown in bottle 2 because C (the agar was not boiled) or D (a microbe fighter was in bottle 1). The best answer would be to mark both.

### Poster Ratings

Rate each student's poster using the form on the back. Criteria for rating student posters are below. Indicate with an "X" which topic the student chose and the appropriate rating for his poster.

Poster 1, "How to Control Microbes."

| | |
|---|---|
| Successful. | Completed poster on own. 3 or more of the following categories represented: (1) soap and water, (2) cleaners or disinfectants, (3) boiling water, (4) covering food, (5) covering your mouth when sneezing or coughing. |
| Incomplete. | Made poster on own but chose pictures representing less than 3 of the above categories. |
| Unsuccessful. | Couldn't select pictures and decide what to include without close supervision and help. |

Poster 2, "Places that Microbes Live."

| | |
|---|---|
| Successful. | Completed poster on own; 3 or more of the following categories represented: (1) people, (2) air, (3) water, (4) school, (5) food, (6) places in school, (7) any other logical place. |
| Incomplete. | Made poster on own but chose pictures representing less than 3 of the above categories. |
| Unsuccessful. | Couldn't select pictures and decide what to include without close supervision and help. |

TALLYSHEET 2-2: Responses To Worksheet 2-3 And Poster Ratings

|  |  | RESPONSES TO WORKSHEET |  | RATING OF POSTER |  |  |  |
|---|---|---|---|---|---|---|---|
|  |  | 1 (microbes like you) | 2 (agar bottle) | Which Poster | Successful | Incomplete | Unsuccessful |
|  | KEY: | A B C D | A B C D |  |  |  |  |
| Teacher |  |  |  |  |  |  |  |
| Attach ID list here. | 01 | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
|  |  | A B C D | A B C D | 1 2 |  |  |  |

| | | | | | | |
|---|---|---|---|---|---|---|
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |
| | A B C D | A B C D | 1 2 | Successful | Incomplete | Unsuccessful |

Does this review give an accurate indication of student understanding? ☐ Yes ☐ No
If not, what other evidence do you have of student learning?

UNIT II, CORE A
ACTIVITY 2-8: "Review Of Success"

Teacher
BSCS USE: Post ____ Tally ____ Rev ___

Activity name suggested by class:

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) | |
|---|---|---|
| HIGH INTEREST | | → ________ ________ ________ ________ |
| MODERATE INTEREST | | |
| INDIFFERENCE | | |
| MODERATE RESISTANCE | | |
| STRONG DISLIKE | | → ________ ________ ________ ________ |
| HARD TO RATE | | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet # | # | # | Game # | Slides (show slide nos.) | Transparency # | # | # | Card(s) # | Tape(s) # | Other # |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:

| | | | |
|---|---|---|---|
| ☐ Worthwhile --keep as is | ☐ Of value--needs the revision suggested | ☐ Worth salvaging--make major changes described | ☐ Worthless --drop it |

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Did any student give away the answer to any question on this worksheet?
☐ No ☐ Yes: Comment.

18. Have a student take a picture of the best one or two posters of each topic and send them to us. Tell us who took the picture and who made the poster. [Be sure to send us Tallysheet #2 rating the posters.]

19. Concern (or questions) about content:

20. Messages for staff (read immediately):

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

**SIDE A**

BSCS Evaluation: **EMH Feedback Form 1c**

UNIT II, CORE A
ACTIVITY 2-8: "Review Of Success"

Teacher ________________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

## UNIT II
## REACTIONS TO CORE A

1. Was the background information for this core adequate? ☐ Yes ☐ No
Comment:

2. Was it clear to you why these particular activities were chosen and the direction they were leading? ☐ Yes ☐ No
Comment:

3. Did the activities fulfill the purposes stated in the Guide for this core? ☐ Yes ☐ No
Comment:

4. How would you increase the clarity of this core for students? (Help them understand why they are doing these activities.)

5. Is there a practical (take-home) value for your students in these activities? ☐ Yes ☐ No
6. If yes, what do you see as the "take-home" lesson? If no, what is needed?

7. In these materials, what things did your students find difficult to do?

8. Should there be more clues to success or reviews of success in this core? ☐ Yes ☐ No
Comment:

9. Was there too much reading and too many teacher directions? ☐ Yes ☐ No
Comment:

BSCS Evaluation: EMH Feedback Form 2a

5. Is there a practical (take-home) value for your students in these activities? ☐ Yes ☐ No
6. If yes, what do you see as the "take-home" lesson? If no, what is needed?

7. In these materials, what things did your students find difficult to do?

8. Should there be more clues to success or reviews of success in this core? ☐ Yes ☐ No
Comment:

9. Was there too much reading and too many teacher directions? ☐ Yes ☐ No
Comment:

10. Did you make use of the Planning Guide? ☐ Yes ☐ No
Comment:

11. If you could teach your way, rather than following the Guide, how would you do it?

12. Which of your students do you believe were unsuccessful in achieving the objectives of this core of activities? Explain.

SIDE A

NEW STUDENTS ENTERING DURING THIS CORE

| Date Entered | Last Name Name Used | Ethnic Group | Sex | Birthdate | Test date | Test |
|---|---|---|---|---|---|---|
| | | W B S O | M F | | | W B O |
| | | W B S O | M F | | | W B O |
| | | W B S O | M F | | | W B O |
| | | W B S O | M F | | | W B O |

STUDENTS DROPPED IN THIS PERIOD

| Date Dropped | Last Name First |
|---|---|
| | |
| | |
| | |

W = white
B = black
S = Spanish-American
O = other

W = WI
B = Bi
O = ot
(n

ADDITIONAL INFORMATION ON NEW STUDENTS:

ENTS ENTERING DURING THIS CORE

| irthdate | Test date | Test | Total | Verbal | Performance | Previous Test Score |
|---|---|---|---|---|---|---|
| | | W B O | | | | |
| | | W B O | | | | |
| | | W B O | | | | |
| | | W B O | | | | |

W = WISC
B = Binet
O = other
(name)

**Me and my Environment**

UNIT II. ME AS A HABITAT

CORE B. DISEASE IN PEOPLE HAB

AIMS FOR ME AND MY ENVIRONMENT

1. DEVELOPMENT IN EACH CHILD OF A SENSE OF IDENTITY AS A PERSON WHO HAS SOME DEGREE OF CONTROL OVER AND CAN ACT ON HIS ENVIRONMENT. This will lead to a degree of self-determination based on a rational coping with situations rather than on a passive compliance or an impulsive response to problems.
2. DEVELOPMENT IN EACH CHILD OF A SECURE SELF-IMAGE. More than anything else, each activity is intended to be a success experience for each child. It is the teacher's responsibility -- almost obligation -- to see that each child succeeds at a level that is challenging to his abilities and that preserves his self-respect. It is a further responsibility of the teacher to point out his achievement. The students as a group should help each individual fit what he has done into a pattern of accomplishment.
3. DEVELOPMENT IN EACH CHILD OF AN INTEREST THAT COULD BECOME A HOBBY OR AVOCATION OVER A LIFETIME (through an exposure to an array of experiences in science). It is hoped that many children will find some area -- perhaps growing plants, caring for animals, identifying flowers, collecting things, or simply enjoying outings into the country -- that they feel strongly about and can develop some competence or knowledge in. This would provide a means of self-expression, and (perhaps) allow some degree of sharing or involvement with others.
4. DEVELOPMENT IN EACH CHILD OF A SENSE OF RELATIONSHIP AND EMPATHY WITH OTHER LIVING THINGS. It is hoped that this will lead to a positive regard and caring about what affects them as individuals and as a group, because what affects them affects the community of man.
5. DEVELOPMENT IN EACH CHILD OF AN UNDERSTANDING OF ENVIRONMENTAL CONDITIONS that will lead to a sense of responsibility for the environment and actions that protect or improve it.

1. Recognize the world of micro
2. Understand that the human bod factors in the environment.
3. Comprehend the effects of car alcohol, and smoking) and ser
4. Realize that he has some cont greater degree of well-being

1. Realize that certain microorg cause disease.
2. Realize that the body has def
3. Appreciate the need for clean
4. Be aware that contagious dise contact.

## UNIT II. ME AS A HABITAT

## CORE B. DISEASE IN PEOPLE HABITATS

BSCS

### UNIT II GOALS

1. Recognize the world of microbes as a part of the world of living things.

2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.

3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.

4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

### OBJECTIVES OF CORE B

1. Realize that certain diseases are caused by microbes, but that all microbes do not cause disease.

2. Realize that the body has defenses against some diseases and not others.

3. Appreciate the need for cleanliness, especially as it applies to wounds.

4. Be aware that contagious diseases are spread from organism to organism by bodily contact.

## CORE B RATIONALE

As was learned previously in Core A (Microbes And Me), the human body, both outside and inside, is alive with billions of microbes. During his entire life man acts as a host to this unseen life, which normally receives little attention. Those forms which can cause disease, however, are of special concern. To an extent seldom realized, the health and well-being of man are influenced by the presence or absence of microbes in his environment.

For thousands of years man was ignorant of the cause of disease and of how it could be prevented. While we do not yet know all the answers to our health problems, it is obvious that microbes play a significant role. It is the purpose of this core to inform the student about the nature of certain harmful microbes, about how they affect us, and give him some basic facts about the means by which they might be controlled. Such knowledge will not only develop a greater appreciation of some of the unseen and unfamiliar aspects of the environment, but it will also help the student to live more healthfully.

Activity 2-9 (The Good Guys And The Bad Guys) reemphasizes that microbes can be found almost anywhere. That certain of these microbes can make people sick and cause disease is then introduced. If a person places himself in a position where a variety of microbes are found, such as near a dump or close to a person with a cold, he is more likely to become diseased than if he avoids such situations. By examining and discussing a selected group of common diseases, the student will learn that microbes cause certain illnesses and how a particular microbe might enter the body to cause disease.

Even though the body is constantly bombarded with potentially harmful microbes, only occasionally does it become diseased. Possible reasons are examined in Activity 2-10 (Body Defenses), where the body's natural defenses in controlling microbial growth

BACK

Microbes enter the
way of a specific route
the microbe's ability t
disease-causing microbe
The Bad Guys) has a spe
with which it is associ
presen.e of certain nat
Activity . 10 (Body Def
are very effective phys
Those microbes that are
may enter through the u

While it is not po
list in Activity 2-9, s
dysentery, mumps, measl
cough, colds, the flu,
respiratory tract; the

Gonorrhea and syph
Staphylococcus, which c
athlete's foot enter th
through bites of insect
Rocky Mountain spotted
introduced by the bite

Most human disease
a communicable disease
contact with them. Dis
the nose, mouth, and th
ing of these microbes b
host. When we cough, t
into the air. If diseas
the air and may be inha

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## BACKGROUND INFORMATION FOR THE TEACHER

Microbes enter the body to cause disease, and many of them enter by way of a specific route. It differs from microbe to microbe, depending on the microbe's ability to infect certain parts of the body. Each of the disease-causing microbes referred to in Activity 2-9 (The Good Guys And The Bad Guys) has a special affinity for the particular part of the body with which it is associated. This selectivity is due partly to the presence of certain natural barriers, some of which are discussed in Activity 2-10 (Body Defenses). The unbroken skin and moist body membranes are very effective physical barriers to most disease-causing microbes. Those microbes that are able to survive on the skin until a break occurs may enter through the unnatural opening.

While it is not practical to include every microbial disease on the list in Activity 2-9, some of the more common ones are as follows: typhoid, dysentery, mumps, measles, and chicken pox enter through the mouth; whooping cough, colds, the flu, T. B., diphtheria, and pneumonia prefer the respiratory tract; the polio virus may also enter through the nose.

Gonorrhea and syphilis enter normally by way of the urogenital tract. Staphylococcus, which causes boils, and the fungus responsible for athlete's foot enter through the skin. Some microbes enter the body through bites of insects or larger animals. Ticks and mosquitoes spread Rocky Mountain spotted fever and malaria respectively, while rabies is introduced by the bite of a rabid animal, such as a dog.

Most human diseases are spread by human carriers. Persons ill with a communicable disease can spread that disease to others who come in contact with them. Disease microbes may leave the body in secretions from the nose, mouth, and throat. Sneezing and coughing greatly aid the spreading of these microbes by increasing the chances of their infecting another host. When we cough, talk, or sneeze, droplets of moisture are sprayed into the air. If disease microbes are present they are thrown out into the air and may be inhaled by other people. Typhoid and other intestinal

## CORE B RATIONALE (continued)

are introduced. The structural make-up of both the nose and the ears is studied to see how it aids in each case to reduce the number of microbes that enter the body through these openings. Further natural defenses that are studied are the secretions from the eyes and mouth (tears and saliva), which are added to cultures of microbes to observe the effects.

Because breaks in the skin provide an excellent point of entry into the body for microbes, the possibility of infection from cuts, scrapes, and similar injuries is emphasized. In Activity 2-11 (Murder Of The Microbes) the student learns that personal cleanliness is an effective way to control microbes. They are shown that in most cases the use of soap and water is an adequate means of preventing microbial infection. Several commercial preparations, advertised as germ or microbe fighters are added to microbe cultures so that students may observe what effects these have on the growth of microbes.

One of the more common environmental hazards in terms of microbes is venereal disease. Both Activity 2-12 (The Environment Is Growing In On Me) and Activity 2-13 (V. D. In Action) deal with this problem at some length. In Activity 2-13 the student learns that V. D., like the common cold and other diseases with which he is familiar, is caused by a microbe. Because V. D. is such a problem among younger people, and because there is so much ignorance and misunderstanding about it, more time is spent on venereal diseases here than on the more familiar diseases. By reading and discussing the booklet *What You Should Know About V. D.*, the student learns some basic information that will enable him to cope more successfully with this environmental hazard. By viewing and discussing a V. D. film in Activity 2-14, the student will receive emphasis and reinforcement of the facts presented in the booklet.

RA

disease (easy t
with disease mi
can result.

Because
person-to-perso
if at all possi
ing used by a

The
Most are harmle
Injury allows
treated with
and helps preve
Sterilizing --
of microbes.
Soap and water

Some inf
person and a p
and gonorrhea.
diseases and
Me) and in Act
population in
in men and in
Gonorrhea,
information
in the booklet

BACKGROUND INFORMATION FOR THE TEACHER (continued)

disease leave the host by way of the feces or urine. If sewage contaminated with disease microbes enters human water supplies, an epidemic of disease can result.

Because diseases such as the common cold can be spread by direct person-to-person contact, a person with such a disease should be avoided if at all possible. Bedclothes, eating utensils, pencils, books, or clothing used by a sick person may spread a contagious disease.

The outside skin or mucous membrane harbors many types of microbes. Most are harmless, but some cause disease. Thus a scratch, break, or other injury allows microbes to enter the body. Any break in the skin should be treated with an antiseptic. An antiseptic kills most microbes it contacts and helps prevent an infection. Iodine, Mercurochrome, alcohol, and Merthiolate -- antiseptics commonly found in the home -- reduce the growth of microbes. This is demonstrated in Activity 2-11 (Murder Of The Microbes). Soap and water is in most cases equally effective.

Some infections are transmitted by direct contact between an infected person and a person free from the disease. The venereal diseases, syphilis and gonorrhea, are two such diseases. These well-known and much dreaded diseases are studied in Activity 2-12 (The Environment Is Zeroing In On Me) and in Activity 2-13 (V. D. In Action). They are present in today's population in almost epidemic proportions. Syphilis occurs naturally only in man and is transmitted almost exclusively by direct sexual contact. Gonorrhea, spread in the same manner, is even more prevelant. The basic information concerning these diseases is very simply and clearly presented in the booklet *What You Should Know About V. D.*

Me and my Environment

UNIT II
CORE B

## PLANNING GUIDE

NOTE: Some activities (*indicated in italics and an* ☛ *in*
be prepared several days or weeks in advance. Use
a teaching and preparation schedule. All supplies

| Activity Number, Page, Tentative Teaching Date | Check List of Supplies Needed | | |
|---|---|---|---|
| | Materials You Furnish | Materials in Supply Kit | *(Itali* |
| 2-9. The Good Guys And The Bad Guys<br>Page ______<br>Date planned ______ | 35mm Slide projector | | |
| | Blue and orange colored pencils | | |
| | | | *One of ea* |
| | | Slide 2-14 | Boy In A |
| | | Slide 2-15 | Garbage I |
| | | Slide 2-16 | Rotten Fo |
| | | Slide 2-17 | Sneeze Pa |
| | | Slide 2-18 | Athlete's |
| | | Slide 2-19 | Sick In B |
| | | Worksheet 2-4 | Good Micr |
| | | Slide 2-20 | Worksheet |
| 2-10. Body Defenses<br>Page ______<br>Date planned ______ | Chopped fresh onion | | *One beake* |
| | Incubator box | | Previousl |
| | Masking tape | | For label |
| | Water | | One glass |
| | 35mm Slide projector | | |
| | | Worksheet 2-5 | Body Outl |
| | | Slide 2-21 | Worksheet |
| | | Mirrors | One per s |
| | | Test tube (18 X 150 mm) | One |
| | | Test tube brush | One |
| | | Colored sugar crystals | One teasp |
| | | Cotton | One roll |
| | | Test tubes (13 X 100 mm) | Three per |
| | | Beaker 1000 ml | One |
| | | Nutrient broth | *One to tw* |
| | | Beakers 250 ml | Two per pa |
| | | Beaker 1000 ml | One |
| | | Beaker 250 ml | One for po |

# PLANNING GUIDE

ities (*indicated in italics and an* ⬉ *in the margin*) must
d several days or weeks in advance. Use this summary as
and preparation schedule. All supplies needed are listed.

BSCS

| upplies Needed | Notes and Suggestions to Teacher (*Italics and Arrow Indicate Advance Preparation Directions*) |
|---|---|
| Materials in Supply Kit | |
| | *One of each color per student* |
| Slide 2-14 | Boy In A Dump |
| Slide 2-15 | Garbage In The Street |
| Slide 2-16 | Rotten Food |
| Slide 2-17 | Sneeze Pattern |
| Slide 2-18 | Athlete's Foot |
| Slide 2-19 | Sick In Bed |
| Worksheet 2-4 | Good Microbe-Bad Microbe |
| Slide 2-20 | Worksheet 2-4 |
| | *One beaker per pair of students. (Get several strong onions.)* |
| | Previously constructed |
| | For labeling test tubes |
| | One glass per pair of students |
| Worksheet 2-5 | Body Outline |
| Slide 2-21 | Worksheet 2-5 |
| Mirrors | One per student |
| Test tube (18 X 150 mm) | One |
| Test tube brush | One |
| Colored sugar crystals | One teaspoonful |
| Cotton | One roll for test tube plugs |
| Test tubes (13 X 100 mm) | Three per pair of students |
| Beaker 1000 ml | One |
| Nutrient broth | *One to two cups. (Prepared as outlined in the activity.)* |
| Beakers 250 ml | Two per pair of students |
| Beaker 1000 ml | One |
| Beaker 250 ml | One for pouring broth |

Me and my Environment

UNIT II
CORE B

# PLANNING GUIDE

NOTE: Some activities (*indicated in italics and an* ☛ *in t*
be prepared several days or weeks in advance. Use t
a teaching and preparation schedule. All supplies n

| Activity Number, Page, Tentative Teaching Date | Check List of Supplies Needed | | |
|---|---|---|---|
| | Materials You Furnish | Materials in Supply Kit | (*Italics* |
| 2-11. Microbe Fighters | Masking tape | | For labeli |
| | Incubator box | | Previously |
| | Soap and water solution | | *Prepare as* |
| | Mercurochrome or | | |
| Page ______ | Merthiolate | | One small |
| Date planned ______ | Bactine or similar product | | One |
| | 35mm Slide projector | | |
| | | Medicine dropper | One for ea |
| | | Test tubes (13 X 100 mm) | Two per st |
| | | Stoppers | To fit 13 |
| | | Nutrient broth | *Prepare as* |
| | | Iodine | Several ml |
| | | Hydrogen peroxide | Several ml |
| | | Alcohol | Several ml |
| | | Test tube (13 X 100 mm) | To be used |
| | | Slide 2-22 | Germ Fight |
| 2-12. The Environment Is Zeroing In On Me | 35mm Slide projector | | |
| | | Booklet - *What You Should Know About V. D.* | |
| | | Slide 2-21 | Body Outli |
| | | Slide 2-23 | Body Targe |
| Page ______ | | | |
| Date planned ______ | | | |

## PLANNING GUIDE

(*indicated in italics and an* ⬉ *in the margin*) must
eral days or weeks in advance. Use this summary as
reparation schedule. All supplies needed are listed.

BSCS

| es Needed<br>erials in Supply Kit | Notes and Suggestions to Teacher<br>(*Italics and Arrow Indicate Advance Preparation Directions*) |
|---|---|
| | For labeling |
| | Previously constructed |
| | *Prepare as outlined in the activity* |
| | |
| | One small bottle |
| | One |
| | |
| ine dropper | One for each microbe fighter |
| tubes (13 X 100 mm) | Two per student |
| ers | To fit 13 X 100 mm test tubes |
| ent broth | *Prepare as outlined in the activity* |
| ne | Several ml per student |
| ogen peroxide | Several ml per student |
| ol | Several ml per student |
| tube (13 X 100 mm) | To be used by you as a control |
| 2-22 | Germ Fighter Effectiveness Chart |
| let - *What You Should Know About V. D.* | |
| 2-21 | Body Outline |
| 2-23 | Body Target Spots |

Me and my Environment

UNIT II
CORE B

# PLANNING GUIDE

NOTE: Some activities (*indicated in italics and an* ☛ *in*
be prepared several days or weeks in advance. Use
a teaching and preparation schedule. All supplies

| Activity Number, Page, Tentative Teaching Date | Check List of Supplies Needed | | |
|---|---|---|---|
| | Materials You Furnish | Materials in Supply Kit | (*Italic* |
| 2-13. V. D. In Action<br>Page ______<br>Date planned ______ | 16mm Film projector<br>Film: *V. D. Questions And Answers* | | *Order this*<br>BFA Educat<br>2211 Michi<br>Santa Moni<br>Purch<br>Renta |
| 2-14. Review Of Success<br>Page ______<br>Date planned ______ | 35mm Slide projector | Worksheet 2-6<br>Slide 2-24<br>Slide 2-25 | Review of<br>Review of<br>Review of |

# PLANNING GUIDE

ies [*indicated in italics and an* ➶ *in the margin*] must
several days or weeks in advance. Use this summary as
nd preparation schedule. All supplies needed are listed.

BSCS

| oplies Needed<br>Materials in Supply Kit | Notes and Suggestions to Teacher<br>[*Italics and Arrow Indicate Advance Preparation Directions*] |
|---|---|
| | *Order this film early to guarantee its arrival when needed:* ➶<br>BFA Educational Media<br>2211 Michigan Avenue<br>Santa Monica, California 90401<br>Purchase Price - $190.00<br>Rental Price - $ 12.50 |
| orksheet 2-6<br>lide 2-24<br>lide 2-25 | Review of Success<br>Review of Success Question 1<br>Review of Success Question 2 |

**Me and my Environment**

### OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

1. Recognize the world of microbes as a part of the world of living things.
2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.

CORE B OBJECTIVES:

1. Realize that certain diseases are caused b microbes, but that all microbes do not caus disease.

## MATERIALS

Slides 2-14 through 2-20
*35mm Slide projector
Worksheet 2-4
*1 Blue colored pencil per student
*1 Orange colored pencil per student

*Not furnished in materials kit

## TEACHING STRATEGIES

Activity 2-9. The Good Guys And The Bad Guys

*In this activity students will recall several places where they are most likely to find an abundance of microbes. At the end of the activity, students will conclude that many microbes cause disease.*

*This activity will review the previous activities on microorganisms while preparing the students for new information about the role of microorganisms in disease.*

Begin by saying:

> WE'VE TALKED ABOUT MANY PLACES WHERE MICROBES CAN BE FOUND. WHAT ARE SOME OF THESE PLACES?
>
> DO YOU THINK ALL MICROBES ARE THE SAME?

R THIS ACTIVITY

gnize the world of microbes as a part
the world of living things.

rstand that the human body can be
lly affected by both living and
living factors in the environment.

IVES:

ize that certain diseases are caused by
robes, but that all microbes do not cause
ase.

## EACHING STRATEGIES

Good Guys And The Bad Guys

*tudents will recall several places*
*t likely to find an abundance of*
*end of the activity, students will*
*microbes cause disease.*

*review the previous activities on*
*le preparing the students for new*
*the role of microorganisms in disease.*

ABOUT MANY PLACES WHERE MICROBES
. WHAT ARE SOME OF THESE PLACES?

ALL MICROBES ARE THE SAME?

UNIT II. ME AS A HABITAT

CORE B. DISEASE IN PEOPLE HABITATS

ACTIVITY 2-9. THE GOOD GUYS AND THE BAD GUYS

BSCS

## ANTICIPATED STUDENT BEHAVIORS

*At the end of this activity, __each student__ should:*

*--have observed and participated in discussion of Slides 2-14 through 2-20.*
*--have inferred that microbes associated with garbage, filth, and spoiled foods could cause disease.*
*--realize that of the many microbes found throughout his environment, some may cause disease.*
*--be aware of the several ways microbes may enter the body.*

Students:

--respond, "Around the school," "In the air," "In water," "On our bodies."

--respond, "Yes," "No," "Maybe."

ACTIVITY 2-9

**MATERIALS**

**TEACHING STRATEGIES**

ARE MICROBES GOOD OR BAD?

Elicit as many ideas as you can from many students. Determine their concepts of microbes and what microbes do. Be sure to mention some of the "good" things if students do not give any.

Slide 2-14

Project Slide 2-14 and ask:

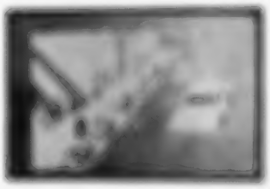
WHAT DOES THIS SLIDE SHOW?

ARE THERE ANY OTHER LIVING THINGS SHOWN IN THE SLIDE?

WE'VE FOUND THAT MICROBES LIVE EVERYWHERE, AND THAT INCLUDES GARBAGE, RATS, FLIES, AND BUGS. THE MICROBES THAT LIVE ON THESE THINGS CAN CAUSE DISEASE AND MAKE PEOPLE SICK. WE CALL THEM BAD MICROBES.

WHAT DO YOU THINK COULD HAPPEN TO THIS BOY PLAYING IN THE DUMP?

Slide 2-15



Accept all responses because many things could happen.

> If students do not mention getting sick, ask:
>
> COULD YOU GET SICK FROM PLAYING IN THE DUMP?
>
> WHY?

Project Slide 2-15 and ask:

WHAT HAS HAPPENED IN THIS PICTURE?

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| GOOD OR BAD? | --respond, "Good," "Bad," "I don't know." |
| deas as you can from many students.<br>concepts of microbes and what microbes do.<br>on some of the "good" things if students |  |
| 14 and ask: |  |
| HIS SLIDE SHOW? | --observe the slide and respond, "Boy playing in the dump," "Boy playing with garbage." |
| NY OTHER LIVING THINGS SHOWN IN | --respond, "Rats," "Flies," "Bugs." |
| THAT MICROBES LIVE EVERYWHERE, AND<br>ES GARBAGE, RATS, FLIES, AND BUGS.<br>S THAT LIVE ON THESE THINGS CAN<br>SE AND MAKE PEOPLE SICK. WE CALL<br>CROBES. |  |
| THINK COULD HAPPEN TO THIS BOY<br>HE DUMP? | --respond, "Get hurt," "Get dirty," "Get in trouble," "Get sick." |
| swers because many things could happen. |  |
| ents do not mention getting sick, ask: |  |
| OU GET SICK FROM PLAYING IN THE DUMP? | --respond, "Yes." |
|  | --respond, "Microbes are at the dump," "Flies and rats are dirty," "Microbes cause disease." |
| 15 and ask: |  |
| PPENED IN THIS PICTURE? | --observe the slide and describe the accumulation of garbage in the street. |

**MATERIALS** | **TEACHING STRATEGIES**

WHY DO YOU THINK THIS HAPPENED?

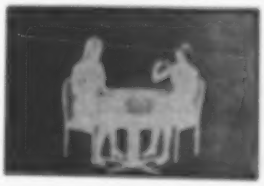
ACCEP
ANSW

WHAT MIGHT HAPPEN TO THE PEOPLE LIVING IN THIS AREA?

Again accept all responses as a variety of things could happen.

> If students do not mention illness, ask:
>
> COULD HAVING GARBAGE ALL OVER YOUR YARD AND STREET MAKE YOU SICK?
>
> WHY MIGHT YOU GET SICK?

Slide 2-16



Project Slide 2-16 and ask:

WHAT ARE THESE PEOPLE DOING?

WHAT DO YOU NOTICE ABOUT THE FOOD?

HOW DO YOU KNOW IT'S SPOILED?

WHAT WOULD HAPPEN TO YOU IF YOU ATE SPOILED FOOD?

WHAT IS IN THE SPOILED FOOD THAT WOULD MAKE YOU SICK?

| ACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| INK THIS HAPPENED? | --respond, "They didn't take the garbage to the dump." "No garbagemen." "Garbagemen are on strike." |
| ACCEPT ALL ANSWERS | |
| PPEN TO THE PEOPLE LIVING IN | --respond, "Get dirty." "Have to move." "Get sick." |
| sponses as a variety of things could | |
| nts do not mention illness, ask: | |
| VING GARBAGE ALL OVER YOUR YARD AND<br>MAKE YOU SICK? | --respond, "Yes." |
| T YOU GET SICK? | --respond, "Microbes." "Bugs." "From the microbes in the garbage." "From the bad microbes." |
| and ask: | |
| E PEOPLE DOING? | --respond, "Eating food." |
| OTICE ABOUT THE FOOD? | --respond, "The food looks spoiled." "Rotten food." |
| OW IT'S SPOILED? | --study the slide and say, "It's got bugs on it." "It's not the right color." |
| PPEN TO YOU IF YOU ATE SPOILED FOOD? | --respond, "Get sick." "Vomit." |
| E SPOILED FOOD THAT WOULD MAKE | --respond, "Microbes." "The bad stuff." "It would taste terrible." |

ACTIVITY 2-9

**MATERIALS**

**TEACHING STRATEGIES**

DO PEOPLE GET SICK ONLY BY EATING SPOILED FOOD?

WHAT ARE SOME OTHER THINGS PEOPLE DO THAT MIGHT MAKE THEM SICK?

A variety of responses can be expected at this point. Allow students to express any or all logical responses.

Then ask:

HOW MANY OF YOU HAVE EVER BEEN SICK?

WHAT ARE SOME OF THE ILLNESSES OR DISEASES YOU HAVE HAD?

List all the responses on the chalkboard.

Refer to the list and ask:

HOW MANY OF THESE ILLNESSES AND DISEASES ARE CAUSED BY MICROBES?

If any responses refer to injuries such as sprained ankles, broken bones, etc., tell the students that while these things might require staying in bed or make you feel bad, they are not considered diseases such as colds or the flu.

| EACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| SICK ONLY BY EATING SPOILED FOOD? | --respond, "No." |
| OTHER THINGS PEOPLE DO THAT MIGHT<br>CK? | --list ways of contracting illness such as catching it from someone else, etc. |
| onses can be expected at this point.<br>express any or all logical responses.<br>ACCEPT ALL ANSWERS |  |
| OU HAVE EVER BEEN SICK? | --raise their hands. |
| OF THE ILLNESSES OR DISEASES<br>? | --respond with such common childhood diseases as flu, colds, mumps, chicken pox, measles, coughs, sore throats, headaches, diarrhea, poison ivy, etc. |
| onses on the chalkboard. |  |
| and ask: |  |
| HESE ILLNESSES AND DISEASES ARE<br>OMMON? | --respond with comments such as, "All of them," "The ones you catch," etc. |
| efer to injuries such as sprained ankles,<br>. tell the students that while these<br>re staying in bed or make you feel bad,<br>dered diseases such as colds or the flu. |  |

## MATERIALS

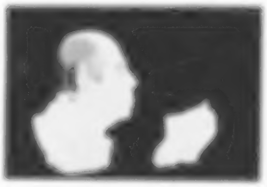
## TEACHING STRATEGIES

It is very unlikely that the students will be knowledgeable about the specific causes of more than a few of the diseases listed, if any. You will need to edit the list, removing any conditions which are obviously not caused by microbes (headaches, injuries, poison ivy, etc.). If a condition such as "stomachache" is listed, remove it with the explanation that while microbes may be involved, it is more a symptom, or something you feel, rather than a disease. Also, there may be common microbe-caused diseases that have not been listed and that you should add to those on the chalkboard. Those conditions listed which you aren't sure about, simply say you don't know and place a question mark by the term.

When the list has been completed, say:

> EACH OF THE DISEASES WE HAVE LISTED IS CAUSED BY MICROBES FROM OUR ENVIRONMENT. LET'S TRY TO ANSWER THE QUESTION, "HOW DO MICROBES ENTER OUR BODY?"

Slide 2-17



Project Slide 2-17 of the person sneezing and ask:

> WHAT IS THIS PERSON DOING?
>
> WHAT IS FORCED OUT OF A PERSON'S MOUTH OR NOSE WHEN HE SNEEZES?

If the students do not say that microbes are in the sneeze spray, ask:

> WHAT LIVING THINGS, TOO SMALL TO SEE, ARE VERY LIKELY TO BE IN THE SPRAY COMING FROM A PERSON'S MOUTH AND NOSE WHEN HE SNEEZES?
>
> WHERE DO MICROBES GO AFTER A PERSON SNEEZES?

| ING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| t the students will be knowledge-<br>: causes of more than a few of the<br>y. You will need to edit the list,<br>which are obviously not caused<br>injuries, poison ivy, etc.). If<br>omachache" is listed, remove it<br>at while microbes may be involved,<br>r something you feel, rather than a<br>ay be common microbe-caused diseases<br>ed and that you should add to those<br>se conditions listed which you<br>ly say you don't know and place a<br>rm. | |
| completed, say: | |
| ES WE HAVE LISTED IS CAUSED<br>UR ENVIRONMENT. LET'S TRY TO<br>N, "HOW DO MICROBES ENTER | |
| he person sneezing and ask: | |
| N DOING? | --respond, "Sneezing." |
| OF A PERSON'S MOUTH OR<br>ES? | --respond, "Water," "Spray," "Snot," "Microbes." |
| say that microbes are in the | |
| , TOO SMALL TO SEE, ARE VERY<br>E SPRAY COMING FROM A PERSON'S<br>N HE SNEEZES? | --respond, "Microbes." |
| GO AFTER A PERSON SNEEZES? | --respond, "Into the air," "They land on things," etc. |

**MATERIALS**

**TEACHING STRATEGIES**

Referring to the slide, say:

WHAT MIGHT HAPPEN IF THIS PERSON HAD A COLD OR THE FLU AND YOU WERE SITTING OR STANDING NEAR HIM?

HOW WOULD THE MICROBES GET INTO YOUR BODY?

WHAT COULD YOU AND THIS PERSON DO WHICH MIGHT PREVENT YOU FROM CATCHING THE DISEASE HE HAS?

Slide 2-18

Project Slide 2-18 and ask:

DOES ANYONE KNOW WHAT DISEASE THIS PERSON MIGHT HAVE?

If no one mentions athlete's foot, ask:

HAS ANYONE EVER HAD ATHLETE'S FOOT? WHAT IS IT LIKE?

Some of the boys in the class probably will be familiar with this disease. However, if no student has had athlete's foot, or is unable to describe the symptoms, say:

WHEN YOU HAVE THE DISEASE CALLED ATHLETE'S FOOT, THE SKIN BETWEEN YOUR TOES IS RED AND CRACKED, AND YOUR TOES BURN AND ITCH.

Then say:

WHAT DO YOU THINK CAUSES ATHLETE'S FOOT?

| ING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| , say: |  |
| IF THIS PERSON HAD A COLD OR ERE SITTING OR STANDING NEAR HIM? | --respond, "I'd catch his microbes," "It would get on me," "I'd get sick," "I'd move away from him." |
| ROBES GET INTO YOUR BODY? | --respond, "Through my mouth," "In my nose," "I'd breathe it in." |
| D THIS PERSON DO WHICH MIGHT CATCHING THE DISEASE HE HAS? | --respond, "Cover your mouth when you sneeze," "Stay away." |
| ask: |  |
| WHAT DISEASE THIS PERSON | --respond, "Athlete's foot," "Something wrong with his feet," "An itchy foot," "A sliver." |
| lete's foot, ask: |  |
| AD ATHLETE'S FOOT? WHAT IS | --respond by describing symptoms such as itching, redness, cracked skin between the toes, burning. |
| e class probably will be familiar wever, if no student has had nable to describe the symptoms, |  |
| DISEASE CALLED ATHLETE'S FOOT, OUR TOES IS RED AND CRACKED, N AND ITCH. |  |
| CAUSES ATHLETE'S FOOT? | --respond, "I don't know," "Microbes," "Wet feet," "Not drying your feet thoroughly." |

## MATERIALS

Slide 2-19

## TEACHING STRATEGIES

It is doubtful if anyone knows the specific cause, although someone may at this point correctly guess microbes.

Say:

> ATHLETE'S FOOT IS A COMMON DISEASE CAUSED BY MICROBES. WHY DO YOU SUPPOSE IT IS EASY FOR PEOPLE WHO USE THE SAME LOCKER ROOM TO CATCH THIS DISEASE?

Explain how athlete's foot is commonly transmitted if the students are unfamiliar with the cause. Now ask:

> WHAT THINGS MIGHT A PERSON DO TO KEEP FROM CATCHING ATHLETE'S FOOT?

Again, it may be necessary to explain prevention to those students unfamiliar with the disease.

Project Slide 2-19 and ask:

> WHY IS SHE IN BED?
>
> MOST PEOPLE, AT SOME TIME IN THEIR LIFE, USUALLY WHEN THEY ARE YOUNGER, GET DISEASES SUCH AS MEASLES, MUMPS, CHICKEN POX. WHAT MIGHT HAPPEN IF YOU WERE TO DRINK OUT OF A GLASS OR HANDLE AN OBJECT USED BY SUCH A PERSON?

## ATEGIES

the specific cause,
oint correctly guess

DISEASE CAUSED BY
POSE IT IS EASY FOR
CKER ROOM TO CATCH

commonly transmitted if
th the cause. Now ask:

DO TO KEEP FROM

xplain prevention to those
isease.

IN THEIR LIFE, USUALLY
T DISEASES SUCH AS
OX. WHAT MIGHT HAPPEN
F A GLASS OR HANDLE
PERSON?

## ANTICIPATED STUDENT BEHAVIORS

Students:

--infer that people with athlete's foot will leave the microbes where they walk, and other people walking in the same place will pick them up.

--respond by suggesting a person should avoid walking barefoot where an infected person walks; keeping the feet clean with soap and water; using commercial powders or sprays which kill or inhibit the growth of microbes.

--respond, "She's sick," "She's tired."

--respond, "You'd get it too," "You'd catch it," "You'd get their microbes," etc.

**MATERIALS**

**TEACHING STRATEGIES**

Then say:

> WHY IS THERE A GOOD CHANCE THAT YOU TOO MIGHT BECOME SICK IF YOU ARE IN CONTACT WITH A PERSON WHO HAS A DISEASE?

> WHAT MIGHT YOU DO IN THIS CASE TO KEEP FROM GETTING SICK?

It is important that the students understand that a number of diseases are caused by microbes, but not all diseases.

Therefore ask:

> ARE ALL DISEASES OR ILLNESSES CAUSED BY MICROBES?

If students say, "Yes," refer again to the diseases on the chalkboard that are caused by microbes. Remind the that while these illnesses are a result of microbes, people can be sick even if they haven't been infected by microbes. Again mention such conditions (diabetes, hear trouble, headaches, allergies, etc.).

Now ask:

> DO ALL MICROBES MAKE PEOPLE SICK?

If students say "Yes," have them recall the microbes collected and grown from various parts of their bodies. Remind them that many microbes which are normally found the body do no harm.

| ACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| GOOD CHANCE THAT YOU TOO MIGHT<br>YOU ARE IN CONTACT WITH A<br>A DISEASE? | --relate that since they are in contact with a person carrying disease-causing microbes, they too could catch the disease. |
| DO IN THIS CASE TO KEEP FROM | --respond, "Stay away," "Don't touch things he's touched." |
| t the students understand that a<br>are caused by microbes, but not all | |
| ES OR ILLNESSES CAUSED BY MICROBES? | --recall such things as heart attacks, headaches, etc., and respond, "No." |
| es," refer again to the diseases on<br>are caused by microbes. Remind them<br>llnesses are a result of microbes,<br>even if they haven't been infected by<br>ntion such conditions (diabetes, heart<br>allergies, etc.). | |
| S MAKE PEOPLE SICK? | --respond, "No," "Just the bad ones." |
| o," have them recall the microbes<br>from various parts of their bodies.<br>ny microbes which are normally found on | |

## MATERIALS

Slide 2-20

Worksheet 2-6

## TEACHING STRATEGIES

Distribute a copy of Worksheet 2-6 to each student. Give the following directions:

> ON THIS WORKSHEET ARE PICTURES OF TWO IMAGINARY MICROBES LIVING ON A PERSON'S ARM.

Then ask:

> WHAT DO THE MAGNIFIERS IN THIS PICTURE DO?
>
> WHAT DOES THE MICROBE ON THE LEFT LOOK LIKE HE IS DOING?
>
> WHAT DOES THE MICROBE ON THE RIGHT LOOK LIKE HE IS DOING?
>
> DO YOU THINK ONE OF THEM COULD BE A "GOOD GUY?"
>
> DO YOU THINK ONE OF THEM COULD BE A "BAD GUY?"

Distribute the colored pencils and say:

> DRAW A BLUE HAT ON THE ONE YOU THINK IS THE "GOOD GUY" MICROBE AND AN ORANGE HAT ON THE ONE YOU THINK IS A "BAD GUY" MICROBE. TELL US WHY.

HING STRATEGIES

orksheet 2-6 to each student.
ection:

ARE PICTURES OF TWO
LIVING ON A PERSON'S ARM.

ICROBES IN THIS PICTURE DO?

ROBE ON THE LEFT LOOK LIKE

ROBE ON THE RIGHT LOOK LIKE

OF THEM COULD BE A "GOOD GUY?"

OF THEM COULD BE A "BAD GUY?"

pencils and say:

THE ONE YOU THINK IS THE
AND AN ORANGE HAT ON THE
A "BAD GUY" MICROBE. TELL

ANTICIPATED STUDENT BEHAVIORS

Students:

--respond, "Make the microbes look much bigger than they really are."

--respond, "Lounging," "Lying around," "Nothing."

--respond, "Digging," "Trying to get in."

--respond, "Yes," "No," "Sure."

--respond, "Yes," "No," "Sure."

--after studying the pictures on Worksheet 2-6, each student should draw a blue hat on the lounging microbe and an orange hat on the digging microbe, inferring that the lounging microbe is doing no harm while the digging microbe may cause harm.

| MATERIALS | TEACHING STRATEGIES |
|---|---|

After students have drawn the hats, say:

> WRITE ON YOUR WORKSHEET NEXT TO NUMBER ONE WHAT YOU THINK THE LOUNGING MICROBE MIGHT BE DOING WHILE LIVING ON THE ARM.

Help students with spelling and writing if necessary.

Then say:

> NOW WRITE ON YOUR WORKSHEET NEXT TO NUMBER TWO WHAT YOU THINK THE DIGGING MICROBE MIGHT BE DOING WHILE LIVING ON THE ARM.

Collect student worksheets. Tallysheet 2-4 will help you summarize student responses to the worksheet.

If after reviewing and correcting the worksheets, you s that the majority of students have not grasped the concepts introduced in this activity, go back and review t slides and discussion sequences. If you see from the worksheets that any student is having difficulty, revie individually with him before proceeding.

Complete and send in Tallysheet 2-4 and Worksheet 2-4.

HING STRATEGIES

WORK TIME

lrawn the hats, say:

RKSHEET NEXT TO NUMBER ONE
HE LOUNGING MICROBE MIGHT
LIVING ON THE ARM.

pelling and writing if necessary.

R WORKSHEET NEXT TO NUMBER TWO
HE DIGGING MICROBE MIGHT BE
ING ON THE ARM.

sheets. Tallysheet 2-4 will help
responses to the worksheet.

d correcting the worksheets, you see
students have not grasped the con-
this activity, go back and review the
sequences. If you see from the
student is having difficulty, review
before proceeding.

Tallysheet 2-4 and Worksheet 2-4.

ANTICIPATED STUDENT BEHAVIORS

Students:

--write on their worksheets, responding in a manner that would indicate the lounging microbe is harmless, is just living on the arm, doing nothing.

--write on their worksheets, responding in a manner that would indicate the digging microbe is doing harm, trying to get into the body, causing disease.

Teacher ______________________
Date ______________________

### UNIT II, CORE B
### TALLYSHEET 2-3: Summary of Responses to Worksheet 2-6
### Activity 2-9: "The Good Guys And The Bad Guys"

There are two components to this tallysheet: rating of color response and response to questions. Directions for completing the tallysheet are as follows:

Color Response. If a student puts a blue hat on the "good guy" microbe, circle the plus (+) in the appropriate column. If another color is used, circle the minus (-). If no response, circle the zero (0). If a student puts an orange hat on the "bad guy" microbe, circle the plus (+) in the appropriate column. If another color is used, circle the minus (-). If no response, circle the zero (0). Write the total number of correct (+) and no response (0) at the bottom of each column.

Response to Questions. Circle a plus (+) for #1 if the student indicates that the lounging microbe is harmless, just living on the arm, etc. Circle a minus (-) for incorrect responses. Circle a zero (0) for no response. Circle a plus (+) for #2 if the student indicates that the digging microbe is doing harm, trying to get into the body, causing disease, etc. Circle a minus (-) for incorrect responses. Circle a zero (0) for no response. Write the total number of correct (+) and no response (0) at the bottom of each column.

| | | Color Response | | | | | | Question Response | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Good Guy | | | Bad Guy | | | #1 | | | #2 | | |
| | | Blue | | | Orange | | | | | | | | |
| Attach ID<br>list here. | 01 | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |

| | | [illegible] | | | | | | [illegible] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Good Guy | | | Bad Guy | | | #1 | | | #2 | | |
| | | Blue | | | Orange | | | | | | | | |
| Attach ID list here. | 01 | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| | | + | - | 0 | + | - | 0 | + | - | 0 | + | - | 0 |
| TOTAL CORRECT (+) | | ___ | | | ___ | | | ___ | | | ___ | | |
| TOTAL NO RESPONSE (0) | | | | ___ | | | ___ | | | ___ | | | ___ |

UNIT 11, CORE B
ACTIVITY 2-9: "The Good Guys And The Bad Guys"

Activity name suggested by class:

| Teacher<br>BSCS USE: Post ____ Tally ____ Rev ____ |
|---|

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) |
|---|---|
| HIGH INTEREST | |
| MODERATE INTEREST | |
| INDIFFERENCE | |
| MODERATE RESISTANCE | |
| STRONG DISLIKE | |
| HARD TO RATE | |

→ ________ ________ ________ ________

→ ________ ________ ________ ________

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:

☐ Worthwhile --keep as is
☐ Of value--needs the revision suggested
☐ Worth salvaging--make major changes described
☐ Worthless --drop it

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised? Page(s) ____________;

17. Concern (or question) about content:

18. Messages for staff (read immediately):

Have you answered each question, attached annotated Guide, your revisions, student work, etc.?

SIDE A

UNIT II, CORE B
ACTIVITY 2-7: "The Good Guys And The Bad Guys"

Teacher ________________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.
☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

**Me and my Environment**

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

1. Recognize the world of microbes as a part of the world of living things.
2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.
4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE B OBJECTIVES:

2. Realize that the body has defenses against some diseases and not others.
3. Appreciate the need for cleanliness, especially as it applies to wounds.
4. Be aware that contagious diseases are spread from organism to organism by bodily contact.

## MATERIALS

## TEACHING STRATEGIES

Activity 2-10. Body Defenses

*In this activity students will determine the obvious places microbes can get into their bodies (eyes, ears, nose, mouth). They will then identify and test some of the body's natural defenses against disease.*

*Students will realize how very easy it is for microbes to enter their bodies and perhaps be more cautious about washing their hands, putting things into their mouths, blowing their noses, covering their faces when sneezing, etc.*

THIS ACTIVITY

se the world of microbes as a part
world of living things.

and that the human body can be
affected by both living and
ng factors in the environment.

that he has some control over his
te environment and can obtain a
degree of well-being through
us effort.

ES:

that the body has defenses against
iseases and not others.

ate the need for cleanliness,
lly as it applies to wounds.

that contagious diseases are spread
ganism to organism by bodily contact.

## ACHING STRATEGIES

Defenses

*dents will determine the obvious*
*get into their bodies (eyes, ears,*
*will then identify and test some of*
*fenses against disease.*

*how very easy it is for microbes to*
*d perhaps be more cautious about*
*putting things into their mouths,*
*covering their faces when sneezing.*

UNIT II. ME AS A HABITAT

CORE B. DISEASE IN PEOPLE HABITATS

ACTIVITY 2-10. BODY DEFENSES

BSCS

## ANTICIPATED STUDENT BEHAVIORS

*At the end of this activity, each student should:*

*--have completed Worksheet 2-5.*
*--have observed the test tube-brush demonstration.*
*--have concluded that hair in the nose is useful in trapping microbes.*
*--have participated as one member of a team of two students that set up the tear-broth experiment.*
*--have observed the microbe growth in the two tubes after 24 hours of incubation.*
*--have inferred that tears kill microbes.*
*--have looked into another student's ears.*

ACTIVITY 2-10

**MATERIALS**

Slide 2-11
Worksheet 2-9
1 Mirror per student
Test tube (150 x 18 mm)
Test tube brush that just fits
test tube
Colored sugar crystals

**TEACHING STRATEGIES**

Teacher Preparation:

This activity consists of five parts:

1. An introductory discussion and nose demonstration.
2. A taste experiment.
3. A discussion of the taste experiment and an ear activity.
4. A saliva experiment.
5. A discussion of the saliva experiment and a conclusion.

The five parts of the activity are divided so that each part can be completed in one day. Five days should be enough time to complete the entire activity. Necessary teacher preparation is outlined at the beginning of each part.

Part I. Introductory Discussion And Nose Experiment

Teacher Preparation:

Have the necessary materials set out prior to class.

## ING STRATEGIES

of five parts:

discussion and some demonstration.

t.

the yeast experiment and an ear

ment.

the saliva experiment and a

activity are divided so that each
in one day. Five days should b
the entire activity. Necessary
outlined at the beginning of

Discussion and Yeast Experiment

terials set out prior to class.

## ANTICIPATED STUDENT BEHAVIORS

--*have concluded that wax, hair, and curvature help prevent microbes from entering the ear.*
--*have participated as one member of a team of two students that set up the saliva-broth experiment.*
--*have observed microbe growth in the two tubes after 24 hours of incubation.*
--*have inferred that saliva kills microbes.*
--*have concluded that the body's natural defenses are helpful in keeping him from getting sick.*

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | Distribute Worksheet 2-5 and a [illegible] to each student. Begin the activity by asking: |
| | WHERE ON OUR BODIES DO WE FIND MICROBES? |
| Slide 2-21<br>Worksheet 2-5 | ON YOUR WORKSHEET MARK WITH A SMALL CIRCLE THE PLACES WHERE MICROBES COULD GET INTO YOUR BODY. |
| | WHAT PLACES DID YOU MARK? |
| | IF THERE ARE SO MANY PLACES MICROBES CAN GET INTO YOUR BODY, WHY ARE YOU NOT SICK ALL THE TIME? |

## CHING STRATEGIES

DISTRIBUTE MATERIALS

2-3 and a scissor to each student. [illegible]

[illegible] DO WE FIND MICROBES?

ACCEPT ALL ANSWERS

[illegible] BODY WITH A SMALL CIRCLE [illegible] MICROBES COULD GET INTO.

HELP STUDENTS AS NECESSARY

YOU MARK?

[illegible] MICROBES CAN GET [illegible] YOU NOT SICK ALL THE

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond, "Mouth," "Hair," "Hands," [illegible] "Everywhere."

--mark eyes, ears, nose, and mouth.

--indicate the marked body areas.

--respond, [illegible]

ACTIVITY 3-10

**MATERIALS**

**TEACHING STRATEGIES**

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Say:

[illegible]

[illegible]

Then say:

[illegible]

WHY?

[illegible]

WHY?

| G STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| not recognize that their bodies<br>r recall that some microbes are |  |
| N YOUR BODY DO NO HARM. YOUR<br>O FIGHT DISEASE WHICH PREVENT<br>SICK ALL THE TIME. |  |
| IFIED PLACES MICROBES CAN GET<br>S START WITH THE NOSE AND<br>D MICROBES THAT CAUSE DISEASE. |  |
| THINGS IN OUR NOSES THAT<br>AD MICROBES OUT OF OUR | --respond, "Snot," "Hair," "I don't know." |
| to hold the mirror under their | --observe hair in nose. |
| OUR NOSES DO? | --respond, "Catch microbes," "Stop microbes," "Don't know." |
| (see Diagram 2-5). |  |
| YOUR NOSE. WHAT<br>THE TEST TUBE IS? | --respond, "Nose," "I don't know." |
|  | --compare and draw an analogy between shape, its hollowness, etc. |
| NK THE BRUSH IS? | --respond, "Hairs," "I don't know." |
|  | --compare and draw an analogy to structure and position. |

## MATERIALS

## TEACHING STRATEGIES

If students do not get these, you will have to explain the analogy.

Then display the sugar crystals and say:

PRETEND THESE ARE MICROBES.

Pour some "microbes" into the test tube with the brush inside. (Some crystals will fall through, but most will remain trapped in the brush.)

WHAT HAPPENED TO THE MICROBES?

DID ANY MICROBES GET INTO THE BODY?

HOW CAN WE GET THE MICROBES OUT OF OUR NOSES?

Rapidly pull the brush out of the test tube and "microbe will scatter all over the room. Play the role of a sneezer and sneeze, ah-choo!

Ask:

WHAT HAPPENS WHEN WE BLOW OUR NOSES OR SNEEZE?

WHAT SHOULD WE DO WHEN WE SNEEZE OR BLOW OUR NOSES?

WHY?

IF THE MICROBES ARE NOT CAUGHT, WHERE WILL THEY GO?

IS THAT BAD?

WHY?

| HING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| do not get these, you will have to analogy. |  |
| crystals and say: |  |
| MICROBES. |  |
| nto the test tube with the brush s will fall through, but most will brush.) |  |
| THE MICROBES? | --respond, "The hairs trapped them," "The brush stopped them." |
| GET INTO THE BODY? | --respond, "Yes," "Not very many." |
| IE MICROBES OUT OF OUR NOSES? | --respond, "Blow our noses," "Sneeze," "Don't know." |
| out of the test tube and "microbes" the room. Play the role of a -choo! |  |
| WE BLOW OUR NOSES OR SNEEZE? | --recall Slide 2-17 in Activity 2-9 and respond, "Microbes go all over." |
| WHEN WE SNEEZE OR BLOW OUR NOSES? | --respond, "Cover our faces," "Use a handkerchief." |
|  | --respond, "To catch the microbes." |
| RE NOT CAUGHT, WHERE WILL | --respond, "Into the air." |
|  | --respond, "Yes." |
|  | --realize that this exposes others to their microbes. |

## MATERIALS

- *1 Beaker with some freshly chopped strong onion per student
- Hot plate
- 1 Beaker (1000 ml), Pyrex
- 2 Test tubes (100 X 13 mm) per pair of students
- Cotton plugs for test tubes
- 1 - 2 Cups of prepared nutrient broth (soup)
- Tablespoon measure
- *Masking tape
- *Incubator box

*Not furnished in materials kit

## TEACHING STRATEGIES

IF YOU COVER YOUR FACE WITH YOUR HAND OR A HANDKERCHIEF WHEN YOU SNEEZE OR COUGH, WHERE WILL THE MICROBES GO?

WHAT SHOULD YOU DO WITH YOUR HANDS AFTER YOU USE THEM TO COVER A COUGH OR SNEEZE?

Collect the completed worksheets and save them for Part III of this activity.

Part II. Tear Experiment

Teacher Preparation:

Prior to the experiment, set all the necessary supplies out in a central area and mix up enough broth for each pair of students to have about one test tube full. The broth is made by adding two tablespoons of nutrient broth to a quart of water. Boil it until the solution is not cloudy. (They will be using the broth in two experiments, so you may wish to make one quart at this time and use it for both experiments.) Fill one test tube (13 X 100 mm) 1/2 full of broth for each student. Chop up strong onions and place in a beaker for each pair of students.

Begin by asking:

WHAT DO OUR EYES HAVE THAT HELP FIGHT BAD MICROBES?

WHAT DO OUR EYELIDS DO THAT HELP FIGHT MICROBES?

WHAT DO OUR EYELASHES DO THAT HELP FIGHT MICROBES?

> If students do not get this, have them recall that the hair in our noses catches and traps microbes.

WHAT DO OUR TEARS DO TO HELP FIGHT BAD MICROBES?

| ACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| OUR FACE WITH YOUR HAND OR A HEN YOU SNEEZE OR COUGH, WHERE BES GO? | --respond, "Into the handkerchief," "On my hands." |
| U DO WITH YOUR HANDS AFTER YOU VER A COUGH OR SNEEZE? | --respond, "Wash them." |
| ed worksheets and save them for Part y. | |
| riment | |
| : | |
| ment, set all the necessary supplies ea and mix up enough broth for each have about one test tube full. The ding two tablespoons of nutrient broth . Boil it until the solution is not be using the broth in two experiments, make one quart at this time and use it s.) Fill one test tube (13 X 100 mm) or each student. Chop up strong onions er for each pair of students. | |
| ES HAVE THAT HELP FIGHT BAD MICROBES? | --respond, "Lashes," "Tears," "Lids." |
| ELIDS DO THAT HELP FIGHT MICROBES? | --respond, "Cover our eyes." |
| ELASHES DO THAT HELP FIGHT MICROBES? | --respond, "Trap them." |
| nts do not get this, have them recall hair in our noses catches and traps | |
| EARS DO TO HELP FIGHT BAD MICROBES? | --respond, "Wash microbes out of our eyes," "Don't know." |

## MATERIALS

## TEACHING STRATEGIES

DO YOU THINK TEARS KILL MICROBES?

WHAT COULD WE DO TO FIND OUT?

> If students do not suggest this, say:
>
> YOU ARE GOING TO PUT SOME SOUP INTO TWO TEST TUBES. THE SOUP HAS NOT BEEN COVERED. WHAT DO YOU SUPPOSE IS IN IT?

WE ARE GOING TO COLLECT SOME TEARS AND PUT THEM IN ONE OF THE TEST TUBES.

Divide the class into pairs and explain to them how to collect the tears. Have one student hold a beaker of chopped onion near his nose and the other student colle the tears in a small test tube. Each pair of students will need seven or eight tears (about 1/4" to 1/2" fro the bottom of the test tube). If some students are no successful at this, they may have to get their tears f another student.

After students understand how to collect the tears, instruct each pair to get the following supplies from central supply table:

DI

| EACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| TEARS KILL MICROBES? | --predict, "No." |
| DO TO FIND OUT? | --suggest adding tears to broth with microbes. |
| nts do not suggest this, say: | |
| GOING TO PUT SOME SOUP INTO TWO TEST THE SOUP HAS NOT BEEN COVERED. WHAT UPPOSE IS IN IT? | --recall, "Microbes from the air." |
| TO COLLECT SOME TEARS AND PUT F THE TEST TUBES. | |
| nto pairs and explain to them how to Have one student hold a beaker of his nose and the other student collect ll test tube. Each pair of students eight tears (about 1/4" to 1/2" from test tube). If some students are not , they may have to get their tears from | |
| ierstand how to collect the tears, to get the following supplies from the le: | |

DISTRIBUTE MATERIALS

**MATERIALS**

**TEACHING STRATEGIES**

2 Test tubes (13 X 100 mm) half full of broth
1 Empty test tube (13 X 100 mm) for collecting tears
1 Beaker of chopped onion
2 Test tube plugs
1 Beaker
Masking tape

After students have secured supplies, have them label the beakers with their names. Also have them label one test tube "soup" and the other "soup and tears." Write these labels on the chalkboard for them to copy. Have them put these test tubes in the beaker and then collect the tears

When each team has seven or eight tears, have them pour the tears into the test tube labeled "soup and tears."

Ask:

WHY ARE WE PUTTING TEARS INTO ONE TEST TUBE, NOT INTO THE OTHER?

> If students do not know, say:
>
> WE ARE ADDING TEARS TO ONLY ONE TEST TUBE TO SEE IF THERE IS A DIFFERENCE BETWEEN HOW MANY MICROBES GROW WITH TEARS AND HOW MANY GROW WITHOUT TEARS. WE WANT TO MAKE A COMPARISON.

## NG STRATEGIES

0 mm) half full of broth
X 100 mm) for collecting tears
ion

ured supplies, have them label the
s. Also have them label one test
er "soup and tears." Write these
d for them to copy. Have them put
beaker and then collect the tears.

n or eight tears, have them pour
tube labeled "soup and tears."

TEARS INTO ONE TEST TUBE,
?

o not know, say:

TEARS TO ONLY ONE TEST
F THERE IS A DIFFERENCE
ANY MICROBES GROW WITH
MANY GROW WITHOUT TEARS.
KE A COMPARISON.

**WORK TIME**

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond, "Don't know," "We only want to change one thing."

## MATERIALS

1 Test tube (100 X 13 mm) per student
*Test tubes from tear experiment
Hot plate
Pan or beakers of boiling water
Worksheet 2-5 (completed)

*Not furnished in materials kit

## TEACHING STRATEGIES

Plug both test tubes.

Then ask:

WHY ARE WE PLUGGING UP THE TEST TUBES?

Shake gently to mix. Now have students carefully compare the two test tubes. They should look alike.

Then ask students:

WHERE SHOULD WE PUT THESE TEST TUBES SO THE MICROBES WILL GROW?

Part III. Discussion Of Tears And Ears

Direct students to collect their beaker of test tubes from the incubator. The test tubes containing the tears should be clear or thick depending upon what kinds of microbes were in the soup. The plain soup should show a distinct microbial growth.

Begin by asking:

WHAT DID WE PUT IN ONE TEST TUBE?

WHAT DID WE PUT IN THE OTHER TEST TUBE?

WHAT WERE WE TRYING TO FIND OUT?

WHAT IS IN THE TEST TUBE WITH JUST SOUP?

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| ubes. | |
| PLUGGING UP THE TEST TUBES? | --respond, "To keep out any new microbes." |
| mix. Now have students carefully compare es. They should look alike. | --compare the two test tubes and observe that there is no visible difference in the two. |
| s: | |
| D WE PUT THESE TEST TUBES SO THE ILL GROW? | --recall, "Incubator box." |
| WAITING TIME | |
| ussion Of Tears And Ears | |
| to collect their beaker of test tubes from The test tubes containing the tears should k depending upon what kinds of microbes . The plain soup should show a distinct . | |
| : | |
| PUT IN ONE TEST TUBE? | --respond, "Soup." |
| PUT IN THE OTHER TEST TUBE? | --respond, "Soup and tears." |
| E TRYING TO FIND OUT? | --respond, "If tears kill microbes." |
| THE TEST TUBE WITH JUST SOUP? | --respond, "Microbes." |

## MATERIALS

Worksheet 2-5

## TEACHING STRATEGIES

HOW CAN YOU TELL THERE ARE MICROBES GROWING IN THE SOUP?

WHAT DOES THE TEST TUBE WITH THE TEARS LOOK LIKE?

DOES IT LOOK LIKE YOUR TEARS DID SOMETHING TO THE MICROBES?

WHAT DID THE TEARS DO TO THE MICROBES?

To dispose of the contaminated broth, remove the cotto
plugs from the test tubes, place the test tubes with t
broth still in them in a beaker or pan of boiling wate
Allow them to boil for 15 minutes. The broth and wate
may then be poured down the sink. The test tubes shou
then be washed and the cotton plugs thrown away.

After the students have completed the tear lab experim
distribute worksheets completed in Part I. Have them
refer to the drawing of the human body and ask:

HOW DID WE SAY OUR NOSES FIGHT BAD MICROBES?

HOW DO WE GET THE MICROBES OUT OF OUR NOSES?

WHAT DO OUR EYES HAVE THAT KEEP BAD MICROBES OUT OF OUR EYES?

WHAT DO THESE THINGS DO TO KEEP MICROBES OUT?

WHAT DO YOU THINK OUR EARS HAVE THAT HELP TO KEEP BAD MICROBES OUT OF OUR BODIES?

| ACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| ELL THERE ARE MICROBES GROWING | --recall earlier experiences with growing microbes and respond, "There's white stuff on the soup," "It's all fuzzy in one spot," etc. |
| TEST TUBE WITH THE TEARS LOOK LIKE? | --respond, "Clear," "No microbes." |
| LIKE YOUR TEARS DID SOMETHING ES? | --respond, "Yes." |
| TEARS DO TO THE MICROBES? | --infer that the tears killed the microbes. |
| contaminated broth, remove the cotton t tubes, place the test tubes with the m in a beaker or pan of boiling water. for 15 minutes. The broth and water down the sink. The test tubes should the cotton plugs thrown away. |  |
| have completed the tear lab experiment, ets completed in Part I. Have them ng of the human body and ask: |  |
| Y OUR NOSES FIGHT BAD MICROBES? | --recall, "Hairs in the nose trap microbes." |
| THE MICROBES OUT OF OUR NOSES? | --recall, "Sneezing," "Blowing our noses," "Wiping inside the nostrils." |
| YES HAVE THAT KEEP BAD MICROBES ES? | --recall, "Lids," "Lashes," "Tears." |
| THINGS DO TO KEEP MICROBES OUT? | --recall, "Lids cover eyes," "Lashes trap microbes," "Tears kill microbes." |
| HINK OUR EARS HAVE THAT HELP TO OBES OUT OF OUR BODIES? | --respond, "Don't know," "Wax," "Hair." |

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | Divide the class into pairs and have them look into each other's ears and then ask:<br>WHAT DID YOU SEE IN YOUR EARS THAT MIGHT KEEP BAD MICROBES OUT?<br>HOW WOULD THE CURVES IN YOUR EARS, THE SMALL HAIRS, AND WAX KEEP MICROBES OUT?<br>HOW DO YOU GET THESE TRAPPED MICROBES OUT OF YOUR EARS?<br>Tell students that they should never attempt to clean their ears with small objects such as Q-tips, bobby pins, pencils, etc., because it would damage the ear drum and other parts of the inner ear.<br>Say:<br>YOU SHOULD NEVER PLACE ANYTHING "SMALLER THAN YOUR FINGER" IN YOUR EAR. ONLY A TRAINED PERSON SUCH AS A DOCTOR SHOULD WORK INSIDE YOUR EAR.<br>COULD YOU SEE VERY FAR INTO THE EAR?<br>WHY NOT?<br>COULD THIS HELP TO KEEP MICROBES OUT OF YOUR BODIES?<br>HOW?<br>If students don't know, have them recall the microbe experiments with the S-shaped tube. You may need to review that experiment (Core A, Activity 2-7). |

| ACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| to pairs and have them look into each en ask: | |
| EE IN YOUR EARS THAT MIGHT KEEP UT? | --respond, "Tunnels," "Curves," "Hair," "Wax." |
| CURVES IN YOUR EARS, THE SMALL KEEP MICROBES OUT? | --respond, "Trap the microbes," "Microbes would stick in there." |
| THESE TRAPPED MICROBES OUT OF | --respond, "Wash them." |
| they should never attempt to clean ll objects such as Q-tips, bobby pins, use it would damage the ear drum and inner ear. | |
| ER PLACE ANYTHING "SMALLER THAN YOUR R EAR. ONLY A TRAINED PERSON SUCH OULD WORK INSIDE YOUR EAR. | |
| VERY FAR INTO THE EAR? | --respond, "No." |
| | --respond, "Ear curves." |
| P TO KEEP MICROBES OUT OF YOUR | --respond, "Yes." |
| | --recall, "Microbes can't move by themselves," "They can't fall around corners." |
| now, have them recall the microbe e S-shaped tube. You may need to ent (Core A, Activity 2-7). | |

## MATERIALS

- 2 Test tubes (100 X 13 mm) half full of broth per student
- 1 Test tube (100 X 13 mm)
- *Cotton plugs
- *1 Glass of water per pair of students
- *Masking tape
- 1 Beaker (250 ml) or jar for holding test tubes

*Not furnished in materials kit

## TEACHING STRATEGIES

### Part IV. Saliva Experiment

Teacher Preparation:

Prior to this activity, set all the necessary supplies out in a central area and mix enough broth (or use leftover broth from former part of this activity) for each pair of students to have one test tube 3/4 full. Explain to students:

> WHAT BODY OPENINGS HAVE WE TALKED ABOUT WHERE MICROBES CAN GET INTO OUR BODIES?
>
> WHAT WAS ANOTHER PLACE WE SAID MICROBES COULD GO THROUGH TO GET INTO OUR BODIES?

If necessary, use a completed worksheet to review the body areas marked.

> WHAT IS IN YOUR MOUTH ALL THE TIME THAT HELPS FIGHT MICROBES?
>
> WHAT DO YOU THINK YOUR SALIVA MIGHT DO TO BAD MICROBES?
>
> HOW COULD WE FIND OUT?
>
> WE ARE GOING TO DO AN EXPERIMENT LIKE THE ONE WE DID WITH THE TEARS, EXCEPT THAT THIS TIME WE WILL USE SALIVA INSTEAD OF TEARS.
>
> CAN SOMEONE TELL THE CLASS HOW TO SET UP THE EXPERIMENT?

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| Experiment |  |
| ion: |  |
| tivity, set all the necessary supplies area and mix enough broth (or use rom former part of this activity) for dents to have one test tube 3/4 full. nts: |  |
| PENINGS HAVE WE TALKED ABOUT WHERE N GET INTO OUR BODIES? | --recall, "Nose," "Eyes," "Ears." |
| OTHER PLACE WE SAID MICROBES ROUGH TO GET INTO OUR BODIES? | --recall, "Mouth." |
| e a completed worksheet to review the d. |  |
| YOUR MOUTH ALL THE TIME THAT MICROBES? | --respond, "Spit," "Saliva," "Tongue," "Teeth." |
| THINK YOUR SALIVA MIGHT DO TO S? | --predict, "Kill microbes." |
| E FIND OUT? | --respond, "Do an experiment." |
| G TO DO AN EXPERIMENT LIKE THE ONE THE TEARS, EXCEPT THAT THIS TIME SALIVA INSTEAD OF TEARS. |  |
| TELL THE CLASS HOW TO SET UP THE | --respond with instructions. |

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | If students do not respond with instructions for the experiment, say: |

> YOU WILL TAKE SOME SOUP AND PUT IT INTO TWO TEST TUBES. THIS IS LIKE THE SOUP WE USED THE OTHER DAY AND ALREADY HAS MICROBES FROM THE AIR GROWING IN IT. YOU WILL THEN COLLECT SALIVA AND ADD IT TO ONE OF THE TEST TUBES OF SOUP. WE WILL LET THE MICROBES GROW UNTIL TOMORROW AND THEN SEE WHAT THE SALIVA HAS DONE.

Instruct student pairs to get the following supplies from the central supply table:

2 Test tubes (13 X 100 mm) half full of broth
1 Empty test tube (13 X 100 mm) for collecting saliva
2 Test tube plugs
1 Beaker
Masking tape
Glass of water

After the students have secured their supplies, have them label their beakers with their names. Also have them label one test tube "soup" and the other "soup and saliva." Write these words on the chalkboard. Have them put these test tubes into the beaker, rinse their mouths, and then collect the saliva in the empty test tube. When each student pair has about an inch of saliva in their test tubes, have them put it into the test tube labeled "soup and saliva."

## ACHING STRATEGIES

ts do not respond with instructions
xperiment, say:

TAKE SOME SOUP AND PUT IT INTO TWO
S. THIS IS LIKE THE SOUP WE USED
DAY AND ALREADY HAS MICROBES FROM
ROWING IN IT. YOU WILL THEN
ALIVA AND ADD IT TO ONE OF THE TEST
SOUP. WE WILL LET THE MICROBES
L TOMORROW AND THEN SEE WHAT THE
S DONE.

irs to get the following supplies from
able:

100 mm) half full of broth
(13 X 100 mm) for collecting saliva

have secured their supplies, have them
with their names. Also have them
"soup" and the other "soup and saliva."
n the chalkboard. Have them put these
beaker, rinse their mouths, and then
n the empty test tube. When each
out an inch of saliva in their test
t it into the test tube labeled "soup

## ANTICIPATED STUDENT BEHAVIORS

ACTIVITY 2-10

**MATERIALS**

**TEACHING STRATEGIES**

Ask:

WHY ARE WE PUTTING SALIVA INTO ONLY ONE TEST TUBE?

If students do not mention a comparison, say:

WE ARE PUTTING SALIVA INTO ONLY ONE TEST TUBE SO THAT WE CAN COMPARE MICROBE GROWTH WITH AND WITHOUT SALIVA.

Ask:

WHY ARE WE PLUGGING UP THE TEST TUBES?

Stopper both test tubes. Shake gently to mix. Have students compare the two test tubes. The saliva will settle to the bottom of the tube.

Have students place their beakers with the test tubes in the incubator box for 24 hours.

## HING STRATEGIES

NG SALIVA INTO ONLY ONE

ention a comparison, say:

ALIVA INTO ONLY ONE TEST TUBE
OMPARE MICROBE GROWTH WITH AND

GING UP THE TEST TUBES?

es. Shake gently to mix. Have
two test tubes. The saliva will
of the tube.

heir beakers with the test tubes
for 24 hours.

WAITING TIME

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond, "To compare," "To see if microbes
grow in both."

--respond, "To keep out any new microbes."

## MATERIALS

Test tubes from saliva experiment
Hot plate
Beakers or pan of boiling water
Slide 2-21
*35mm Slide projector

*Not furnished in materials kit

## TEACHING STRATEGIES

Part V. Conclusion

The next day direct the students to secure their beakers and test tubes from the incubator. Again compare the test tubes. The test tube without saliva will have a very distinct growth of microbes. Saliva will tend to settle to the bottom in the other test tube. The broth in the tube with the saliva should be clearer than the other tube.

Ask students:

DO THE TEST TUBES LOOK THE SAME?

WHAT IS IN THE TEST TUBE WITH JUST SOUP?

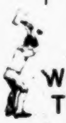
HOW CAN YOU TELL THERE ARE MICROBES IN THAT TEST TUBE?

WHAT DOES THE TEST TUBE WITH SALIVA LOOK LIKE?

WHAT WAS THE ONLY DIFFERENCE IN THE TWO TEST TUBES?

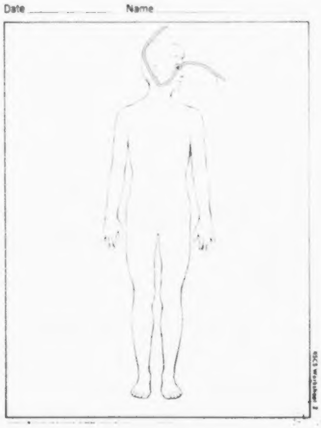
WHAT DID THE SALIVA DO TO THE MICROBES?

WHEN OUR BODIES FIGHT MICROBES, HOW DOES THAT HELP US?

| HING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| he students to secure their beakers<br>he incubator. Again compare the test<br>without saliva will have a very<br>crobes. Saliva will tend to settle<br>other test tube. The broth in the<br>should be clearer than the other tube. | |
|  WORK TIME | |
| S LOOK THE SAME? | --respond, "No." |
| EST TUBE WITH JUST SOUP? | --respond, "Microbes." |
| THERE ARE MICROBES IN THAT | --recall earlier experiences with growing microbes and respond, "There's stuff growing on the soup," "There's white stuff all over." |
| ST TUBE WITH SALIVA LOOK LIKE? | --respond, "Clearer with saliva on the bottom." |
| Y DIFFERENCE IN THE TWO TEST | --recall, "One has saliva." |
| IVA DO TO THE MICROBES? | --infer that the saliva killed the microbes. |
| FIGHT MICROBES, HOW DOES | --infer that it keeps us from getting sick. |

## MATERIALS

Slide 2-21



## TEACHING STRATEGIES

To dispose of the contaminated broth, remove the stopper from the test tubes, place the test tubes in a beaker or pan of boiling water. Boil for 15 minutes. The broth may then be poured down the sink. The test tubes should then be washed.

**CLUES T**

Determine if students understand this activity (2-10) with the following class discussion. Project Slide 2-21 on the chalkboard.

Ask:

> (Student's name), TELL US A SPOT ON OUR BODIES WHERE MICROBES CAN ENTER?

Then say:

> (Student's name), DRAW A CIRCLE ON THAT BODY SPOT.

Repeat this procedure until the eyes, nose, ears, and mouth are identified.

**GIVE S**
**STUDENT**
**TO R**

| EACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| contaminated broth, remove the stopper es, place the test tubes in a beaker or ter. Boil for 15 minutes. The broth d down the sink. The test tubes should |  |
| ents understand this activity (2-10) with ss discussion. Project Slide 2-21 on the |  |
| ame), TELL US A SPOT ON OUR BODIES ES CAN ENTER? | --should identify an appropriate body spot. |
| ame), DRAW A CIRCLE ON THAT BODY SPOT. | --should draw a circle on the identified body spot. |
| dure until the eyes, nose, ears, and ied. |  |

CLUES TO SUCCESS

GIVE SEVERAL
STUDENTS A CHANCE
TO RESPOND

**MATERIALS**

**TEACHING STRATEGIES**

After these spots are identified, ask these questions fo each spot and involve all students in answering.

WHAT DOES THE (spot) HAVE TO HELP KEEP OUT MICROBES?

HOW DOES THIS (defenses) HELP KEEP OUT MICROBES?

WHAT SICKNESSES DO MICROBES CAUSE IF THEY ENTER THE BODY THROUGH (spot)?

## CHING STRATEGIES

e identified, ask these questions for
e all students in answering.

spot) HAVE TO HELP KEEP OUT

defenses) HELP KEEP OUT

DO MICROBES CAUSE IF THEY
THROUGH (spot)?

## ANTICIPATED STUDENT BEHAVIORS

Students:

--identify components for each body spot.

--should express their understanding of how each component keeps microbes out or kills them.

--will recall sicknesses they have learned about related to each body spot.

UNIT II, CORE B
ACTIVITY 2-10: "Body Defenses"

Teacher

Activity name suggested by class:

BSCS USE: Post ____ Tally ____ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) | |
|---|---|---|
| HIGH INTEREST | | → ________ ________ ________ ________ |
| MODERATE INTEREST | | |
| INDIFFERENCE | | |
| MODERATE RESISTANCE | | |
| STRONG DISLIKE | | → ________ ________ ________ ________ |
| HARD TO RATE | | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile ☐ Of value--needs the ☐ Worth salvaging--make ☐ Worthless

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Did any students express a negative attitude toward looking in the nose or ears, or collecting tears or saliva? ☐ No ☐ Yes: Comment.

18. Were most students able to work in teams for the purpose of these experiments?
☐ Yes ☐ No: Comment.

19. Concern (or questions) about content:

20. Were students able to conduct the tear experiment, Part II, and the saliva experiment, Part IV? If not, who and why not?
☐ Yes ☐ No: Comment.

21. Messages for staff (read immediately):

BSCS Evaluation: EMH Feedback Form 1c

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

UNIT II, CORE B
ACTIVITY 2-10: "Body Defenses"

Teacher ____________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

Me and my Environment

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

1. Recognize the world of microbes as a part of the world of living things.
2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.
4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE B OBJECTIVES:

1. Realize that certain diseases are caused by microbes, but that all microbes do not cause disease.
3. Appreciate the need for cleanliness, especially as it applies to wounds.

## MATERIALS

## TEACHING STRATEGIES

Activity 2-11. Microbe Fighters

*In this activity students will learn that microbes may enter their bodies through cuts and open sores. They will experiment with disinfectants which will demonstrate that there are things they can do to prevent microbes from getting into their bodies through cuts and open sores.*

)R THIS ACTIVITY

ognize the world of microbes as a part
the world of living things.

erstand that the human body can be
ally affected by both living and
living factors in the environment.

lize that he has some control over his
ediate environment and can obtain a
ater degree of well-being through
scious effort.

TIVES:

lize that certain diseases are caused
nicrobes, but that all microbes do not
se disease.

reciate the need for cleanliness,
ecially as it applies to wounds.

## EACHING STRATEGIES

icrobe Fighters

*students will learn that microbes may
s through cuts and open sores. They
ith disinfectants which will demonstrate
ings they can do to prevent microbes
their bodies through cuts and open*

| | |
|---|---|
| UNIT II. | ME AS A HABITAT |
| CORE B. | DISEASE IN PEOPLE HABITATS |
| ACTIVITY 2-11. | MURDER OF THE MICROBES |

BSCS

## ANTICIPATED STUDENT BEHAVIORS

*At the end of this activity, each student should:*

*--have set up a test tube with nutrient broth, microbes, and a microbe fighter.*
*--have compared the growth of microbes in his tube with the control tube.*
*--have recorded on Slide 2-22 whether the microbe fighter worked.*
*--should have compared the results in his tube with those of other students.*
*--have concluded that some products are effective in fighting microbes.*
*--have concluded that treatment of injuries is necessary to prevent growth of microbes.*

ACTIVITY 2-11

(108)

## MATERIALS

*Masking tape for labeling
*Incubator box
*Soap and water solution
*Mercurochrome or Merthiolate
*Bactine or similar product
Medicine dropper for each microbe fighter
2 Test tubes (13 X 100 mm) per student
Stoppers for test tubes
1 - 2 Cups prepared nutrient broth
Iodine
Hydrogen peroxide
Alcohol
Control test tube
*35mm Slide projector
Slide 2-22
Test tube rack

*Not furnished in materials kit

## TEACHING STRATEGIES

Teacher Preparation:

1. Prior to the activity prepare and set out all necessary supplies. Make up nutrient broth if none is remaining from the previous activity.

2. Dissolve soap to get a soap and water solution. To get a solution from hand soap, shave soap off the bar with a knife, add water, and stir to dissolve.

Begin class by asking:

IS THERE ANY OTHER WAY THAT BAD MICROBES COULD GET INTO OUR BODIES BESIDES THROUGH OUR EYES, EARS, NOSE, OR MOUTH?

If students do not know that microbes can enter the body through cuts, ask:

WHAT MIGHT HAPPEN IF YOU CUT YOURSELF?

COULD BAD MICROBES ENTER YOUR BODY THROUGH A CUT?

WHEN YOU GET A CUT, WHAT DO YOU DO TO KEEP MICROBES OUT OF YOUR BODY?

ACCEPT
ANSWE

HOW DOES A BANDAGE KEEP MICROBES OUT?

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| aration: | |
| to the activity prepare and set out all ary supplies. Make up nutrient broth if none aining from the previous activity. | |
| ve soap to get a soap and water solution. To solution from hand soap, shave soap off the th a knife, add water, and stir to dissolve. | |
| by asking: | |
| E ANY OTHER WAY THAT BAD MICROBES COULD O OUR BODIES BESIDES THROUGH OUR EYES, OSE, OR MOUTH? | --respond, "Cuts," "Sores," "Don't know." |
| do not know that microbes can enter the body , ask: | |
| GHT HAPPEN IF YOU CUT YOURSELF? | --respond, "You'd bleed," "It would hurt." |
| AD MICROBES ENTER YOUR BODY THROUGH A CUT? | --respond, "Yes." |
| U GET A CUT, WHAT DO YOU DO TO KEEP S OUT OF YOUR BODY? | --respond, "Wash it," "Put a bandage on it." |
| **ACCEPT ALL ANSWERS** | |
| S A BANDAGE KEEP MICROBES OUT? | --respond, "Covers the cut," "Keeps microbes from the air out." |

**MATERIALS**

**TEACHING STRATEGIES**

Now ask:

> WHAT ARE SOME OF THE THINGS PEOPLE USE TO CLEAN CUTS AND SORES?

> LET'S TEST DIFFERENT THINGS PEOPLE USE TO CLEAN CUTS AND SORES AND SEE IF THEY KEEP MICROBES FROM GROWING. THE MICROBE FIGHTERS WE WILL USE ARE IODINE, MERCUROCHROME, BACTINE (or similar product), ALCOHOL, AND HYDROGEN PEROXIDE. (List the names of these microbe fighters on the chalkboard.)

> EACH OF YOU WILL CHOOSE ONE OF THESE TO TEST PLUS A SOAP AND WATER SOLUTION. WE WILL SEE IF SOAP AND WATER WORKS AS WELL AS THE OTHER MICROBE FIGHTERS.

Instruct each of the students to label two test tubes with their names. Pour some broth into a small beaker for each pair. Then have them fill each test tube 1/2 full of nutrient broth, pouring carefully from the small beaker. Make the nutrient broth the same way as outlined in Activity 2-10. Add some microbes to the broth in each test tube by swabbing some part of the body with a Q-tip and swishing it around in the broth. Then add 20 drops of the microbe fighter to the broth in one test tube. Add 20 drops of the soap and water solution to the broth in the other test tube. Stopper the tubes and shake gently. Be sure students use a different dropper for each solution. Put the test tubes into the test tube rack and place it in the incubator box for 24 hours.

## TEACHING STRATEGIES

SOME OF THE THINGS PEOPLE USE TO CLEAN SORES?

ST DIFFERENT THINGS PEOPLE USE TO CLEAN SORES AND SEE IF THEY KEEP MICROBES WING. THE MICROBE FIGHTERS WE WILL USE NE, MERCUROCHROME, BACTINE (or similar , ALCOHOL, AND HYDROGEN PEROXIDE. (List s of these microbe fighters on the rd.)

OU WILL CHOOSE ONE OF THESE TO TEST PLUS ND WATER SOLUTION. WE WILL SEE IF SOAP R WORKS AS WELL AS THE OTHER MICROBE

of the students to label two test tubes with Pour some broth into a small beaker for hen have them fill each test tube 1/2 full roth, pouring carefully from the small the nutrient broth the same way as outlined -10. Add some microbes to the broth in e by swabbing some part of the body with a shing it around in the broth. Then add he microbe fighter to the broth in one test drops of the soap and water solution to the other test tube. Stopper the tubes and Be sure students use a different dropper tion. Put the test tubes into the test tube e it in the incubator box for 24 hours.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond with a variety of products, e.g., Bactine, iodine, Mercurochrome, soap and water, etc.

ACTIVITY 2-11
(110)

**MATERIALS**

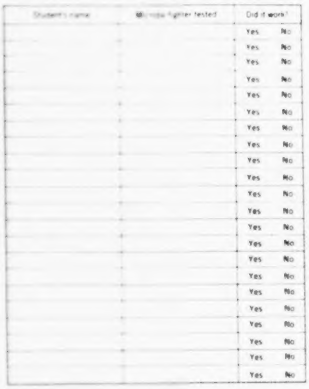
**TEACHING STRATEGIES**

Prepare a test tube with no microbe fighter. Label it "No Microbe Fighter." Show this to the students and ask:

> WHY DO WE WANT TO HAVE A TEST TUBE WITH NO MICROBE FIGHTER?

> If the students fail to recognize the need for a control, explain that this will give them something to compare their own test tubes with. Include your control tube (the one with no microbe fighter) in the rack that is being incubated.

Slide 2-22



| Student's name | Microbe fighter tested | Did it work? |
|---|---|---|
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |
| | | Yes No |

The next day have the students compare test tubes. Have each one indicate whether his microbe fighter (not the soap and water) worked or not by writing his name and circling "yes" or "no" on the slide (2-22) projected on the chalkboard.

As each student goes to the chalkboard to write in his results, have him bring his test tube to you so you can rate him on his judgment of results regarding the effectiveness of his microbe fighter.

Be alert to students who are confused or unable to judge the outcome of their experiments. Record this problem on Tallysheet 2-5 in the judgment category as students fill in their results on the chalkboard.

## TEACHING STRATEGIES

tube with no microbe fighter. Label it ghter." Show this to the students and ask:

WANT TO HAVE A TEST TUBE WITH NO IGHTER?

he students fail to recognize the need for ntrol, explain that this will give them thing to compare their own test tubes with. ude your control tube (the one with no obe fighter) in the rack that is being bated.

WAITING TIME

ave the students compare test tubes. Have ate whether his microbe fighter (not the ) worked or not by writing his name and or "no" on the slide (2-22) projected on .

t goes to the chalkboard to write in his him bring his test tube to you so you can s judgment of results regarding the effec- s microbe fighter.

udents who are confused or unable to judge their experiments. Record this problem on in the judgment category as students fill ts on the chalkboard.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond, "So we can see what happens to the microbes without a microbe fighter."

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | After students have had a chance to compare their test tubes, ask:<br>DO ALL THE TUBES LOOK THE SAME?<br>ARE THERE MICROBES GROWING IN THE TEST TUBE THAT HAD NO MICROBE FIGHTER ADDED TO IT?<br>HOW DO YOU KNOW?<br>WHAT DID THE CONTENTS OF THE TUBE LOOK LIKE YESTERDAY WHEN WE STARTED THE EXPERIMENT?<br>ARE THERE MICROBES IN THE TEST TUBES THAT HAD MICROBE FIGHTERS ADDED TO THEM?<br>HOW DO YOU KNOW?<br>ARE THERE MICROBES IN THE TEST TUBES THAT HAD SOAP AND WATER ADDED TO THEM?<br>HOW DO YOU KNOW?<br>DO THE MICROBE FIGHTERS HELP FIGHT BAD MICROBES?<br>DO SOME MICROBE FIGHTERS WORK BETTER THAN OTHERS?<br>DOES SOAP AND WATER HELP FIGHT BAD MICROBES?<br>HOW DOES SOAP DO THIS?<br>DOES SOAP AND WATER WORK JUST AS WELL AS SOME OF THE OTHER MICROBE FIGHTERS? |

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| ve had a chance to compare their test | |
| UBES LOOK THE SAME? | --respond, "No." |
| CROBES GROWING IN THE TEST TUBE THAT BE FIGHTER ADDED TO IT? | --respond, "Yes." |
| NOW? | --respond, "I can see them," "It's cloudy." |
| CONTENTS OF THE TUBE LOOK LIKE EN WE STARTED THE EXPERIMENT? | --recall the initial phases of the experiment and indicate that it was clear. |
| CROBES IN THE TEST TUBES THAT HAD TERS ADDED TO THEM? | --respond, "Some have microbes," "Some do not." |
| NOW? | --respond, "They look the same as when we started," "They look clearer than when we started." |
| CROBES IN THE TEST TUBES THAT HAD ER ADDED TO THEM? | --relate varying results. |
| NOW? | --respond, "They look the same as when we started," "They haven't changed." |
| BE FIGHTERS HELP FIGHT BAD MICROBES? | --conclude that some products do help fight microbes and that some don't. |
| OBE FIGHTERS WORK BETTER THAN OTHERS? | --conclude that there is a difference. |
| D WATER HELP FIGHT BAD MICROBES? | --recall, "Yes." |
| ? DO THIS? | --recall that soap helps wash microbes away. |
| D WATER WORK JUST AS WELL AS SOME OF CROBE FIGHTERS? | --respond in a confused way. |

ACTIVITY 2-11

⑴⑴⑵

| **MATERIALS** | **TEACHING STRATEGIES** |
|---|---|
| | Help students realize that soap doesn't work really well in the test tube experiment, but that it does help wash microbes away.<br>IF YOU GET CUT, WHAT SHOULD YOU DO?<br>IF YOU HAVE SOAP AND WATER AROUND, IS IT NECESSARY TO USE ANY OF THE FANCIER MICROBE FIGHTERS?<br>IF YOU GET CUT, THE BEST THING TO DO IS WASH IT WITH SOAP AND WATER RIGHT AWAY TO WASH AWAY ANY MICROBES THAT MIGHT BE NEAR. THEN, IF YOU WISH YOU CAN PUT ON ONE OF THE OTHER MICROBE FIGHTERS TO HELP KEEP THE MICROBES AWAY AND OUT OF THE CUT.<br>Explain that serious cuts should be attended to by a doctor or nurse. Serious cuts should be defined as large or deep cuts, cuts made by rusty metals such as nails, screws, pop containers, and junk lying around, and cuts made by dogs or rats. Explain that some microbes cannot be controlled by soap and water or any of the commercial products they are familiar with.<br>If there is sufficient interest in this activity, have the students test additional products which they might bring from home. |

## TEACHING STRATEGIES

ealize that soap doesn't work really well
experiment, but that it does help wash

CUT, WHAT SHOULD YOU DO?

SOAP AND WATER AROUND, IS IT NECESSARY
OF THE FANCIER MICROBE FIGHTERS?

CUT, THE BEST THING TO DO IS WASH
AP AND WATER RIGHT AWAY TO WASH AWAY
ES THAT MIGHT BE NEAR. THEN, IF
U CAN PUT ON ONE OF THE OTHER
HTERS TO HELP KEEP THE MICROBES
UT OF THE CUT.

rious cuts should be attended to by a
. Serious cuts should be defined as large
uts made by rusty metals such as nails,
tainers, and junk lying around, and
s or rats. Explain that some microbes
olled by soap and water or any of the
ucts they are familiar with.

ficient interest in this activity, have
st additional products which they might
.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--conclude that it is necessary to treat injuries to prevent the growth of microbes.

--conclude that since soap and water work just as well, others wouldn't be needed.

Teacher ____________________
Date ____________________

UNIT II, CORE B

## TALLYSHEET 2-4: Record of Slide 2-22 and Rating of Students
Activity 2-11: "Microbe Fighters"

Copy the information from the chart of Slide 2-22 in the appropriate columns as the student enters it on the projected chart. Rate each student on his ability to judge his results and his ability to record the information on the chart. Use the categories described below.

Judgment. This category solicits a rating of the student's ability to judge the results of his experiment. In order to make this rating you will need to check his test tube and be aware of students who have to be told (by you or other students) what his results were.

Able. Check this column if the student was able to judge the effectiveness of his microbe fighters with no difficulty.

Difficult. Check this column if the student had some difficulty in judging the effectiveness of his microbe fighter (acted uncertain, kept changing his mind, etc.)

Unable. Check this column if the student was unable to make a judgment or had to be told what the results were.

? Check this column if you have no idea whether the student had a problem judging the results of his experiment.

Recording. This category solicits a rating of the student's ability to record the results of his experiment on the chart.

Okay. Check this column if the student's entry is okay; if he had little or no difficulty knowing what to write, where to put responses, spelling, writing, etc.

Help. Check this column if the student had to have help; if he experienced much difficulty knowing what to write, understanding where to put responses, spelling, writing, etc.

| | Microbe Fighter Tested | Did it Work? | Judgment | | | | Recording | |
|---|---|---|---|---|---|---|---|---|
| | | | Able | Diff. | Unable | ? | Okay | Help |
| Attach ID list here. 01 | | Yes No | | | | | | |
| | | Yes No | | | | | | |
| | | Yes No | | | | | | |
| | | Yes No | | | | | | |
| | | Yes No | | | | | | |
| | | Yes No | | | | | | |

Okay. Check this column if the student's entry is okay; if he had little or no difficulty knowing what to write, where to put responses, spelling, writing, etc.

Help. Check this column if the student had to have help; if he experienced much difficulty knowing what to write, understanding where to put responses, spelling, writing, etc.

| | | Microbe Fighter Tested | Did it Work? | Judgment | | | | Recording | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Able | Diff. | Unable | ? | Okay | Help |
| Attach ID list here. | 01 | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
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| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
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| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |
| | | | Yes No | | | | | | |

UNIT II, CORE B
ACTIVITY 2-11: "Microbe Fighters"

Activity name suggested by class:

Teacher

BSCS USE: Post ____ Tally ____ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) |
|---|---|
| HIGH INTEREST | |
| MODERATE INTEREST | |
| INDIFFERENCE | |
| MODERATE RESISTANCE | |
| STRONG DISLIKE | |
| HARD TO RATE | |

HIGH INTEREST → ________ ________ ________ ________

HARD TO RATE → ________ ________ ________ ________

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile

|  | # | # | # | # | slide nos.) | # | # | # | # | # | # |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is |  |  |  |  |  |  |  |  |  |  |  |
| Revise slightly |  |  |  |  |  |  |  |  |  |  |  |
| Revise much |  |  |  |  |  |  |  |  |  |  |  |
| Worthless: omit |  |  |  |  |  |  |  |  |  |  |  |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:

| ☐ Worthwhile --keep as is | ☐ Of value--needs the revision suggested | ☐ Worth salvaging--make major changes described | ☐ Worthless --drop it |
|---|---|---|---|

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Did most students actively compare their results with others?
☐ Yes ☐ No
Were there any contradictory results?
☐ No ☐ Yes: How did you deal with them?

18. Did students bring in additional products to test?
☐ No ☐ Yes: What?

19. Concern (or questions) about content:

20. Messages for staff (read immediately):

BSCS Evaluation: EMH Feedback Form 1c

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

## UNIT II, CORE B
## ACTIVITY 2-11: "Microbe Fighters"

Teacher ________________

### REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

**Me and my Environment**

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.

4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE B OBJECTIVES:

2. Realize that the body has defenses against some diseases and not others.

4. Be aware that contagious diseases are sprea from organism to organism by bodily contact.

## MATERIALS

## TEACHING STRATEGIES

Activity 2-12. The Environment Is Zeroing In On Me

*In this activity the student will review what he has learned so far about the common entry points of microbes into the body; that some microbes may cause disease; and what preventive measures can be taken to inhibit their entry. The activity will conclude with the introduction of venereal disease organisms -- those microbes which are so prevalent in our society, yet so little discussed or understood.*

S ACTIVITY

d the effects of certain elements
vironment (disease, drugs,
and smoking) and some of their
d psychological aspects.

hat he has some control over his
environment and can obtain a
egree of well-being through
effort.

hat the body has defenses against
ases and not others.

that contagious diseases are spread
nism to organism by bodily contact.

## ING STRATEGIES

ironment Is Zeroing In On Me

*udent will review what he has*
*e common entry points of microbes*
*e microbes may cause disease; and*
*s can be taken to inhibit their*
*ll conclude with the introduction*
*anisms -- those microbes which are*
*iety, yet so little discussed or*

UNIT II. ME AS A HABITAT

CORE B. DISEASE IN PEOPLE HABITATS

ACTIVITY 2-12. THE ENVIRONMENT IS ZEROING IN ON ME

BSCS

## ANTICIPATED STUDENT BEHAVIORS

*At the end of this activity, each student should:*

- *--have reviewed the common entry points of microbes into the body and precautions that can be taken to limit microbe entry.*
- *--have read and participated in a discussion of the booklet* (What You Should Know About V. D.).
- *--have an understanding about how V. D. is transmitted, how it affects the body, what the symptoms of the diseases are, what he should do if he suspects that he may have contracted the diseases, and how to prevent contracting the diseases.*
- *--have been provided accurate information concerning local laws on reporting V. D. cases to parents and authorities.*

ACTIVITY 2-12

(114)

**MATERIALS**

*35mm Slide projector
Booklet (WHAT YOU SHOULD KNOW ABOUT V. D.)
Slide 2-21
Slide 2-23

*Not furnished in materials kit

**TEACHING STRATEGIES**

Teacher Preparation:

During the crucial period of early adolescence a child often given information by both his peers and his paren about his growth, development, and well-being that is either incomplete or inaccurate. It is strongly recommended that the Growth and Development Unit of *ME NOW* be taught to your students. The unit was designed as a attempt to provide the handicapped child with accurate complete information on growth and development as his needs and abilities dictate. These purposes are clearl outlined in the introduction to that unit and are recommended reading.

*ME NOW* is a life science program for the educable menta handicapped which focuses on the growing child and his bodily functions. Growth and Development is the final unit, and can be purchased along with accompanying slid and worksheets.

For a comprehensive explanation of the *ME NOW* program a a current price list contact the distributor, Hubbard Scientific, 2855 Shermer Road, Northbrook, Illinois, 60062, or BSCS, EMH Office, P. O. Box 930, Boulder, Colorado, 80302.

If you have taught the unit in *ME NOW*, this activity o V. D. will probably be very comfortable for both studer and teacher. If, however, you have not taught *ME NOW*, then the following general comments might prove worthy of note:

1. The range of sexual experience among your student will vary greatly from class to class and within one class -- from those who are quite unfamiliar with the reproductive process to those who have already experienced sexual intercourse.

## TEACHING STRATEGIES

ation:

cial period of early adolescence a child is
formation by both his peers and his parents
ch, development, and well-being that is
ete or inaccurate. It is strongly recom-
e Growth and Development Unit of *ME NOW*
our students. The unit was designed as an
vide the handicapped child with accurate and
mation on growth and development as his
ities dictate. These purposes are clearly
e introduction to that unit and are
ading.

fe science program for the educable mentally
ich focuses on the growing child and his
ns. Growth and Development is the final
be purchased along with accompanying slides
.

nsive explanation of the *ME NOW* program and
e list contact the distributor, Hubbard
55 Shermer Road, Northbrook, Illinois,
, EMH Office, P. O. Box 930, Boulder,
2.

ught the unit in *ME NOW*, this activity on
bably be very comfortable for both student
If, however, you have not taught *ME NOW*,
wing general comments might prove worthy

e of sexual experience among your students
y greatly from class to class and within any
s -- from those who are quite unfamiliar
e reproductive process to those who have
experienced sexual intercourse.

## ANTICIPATED STUDENT BEHAVIORS

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | 2. The approach in the V. D. booklet used later in this activity is factual -- an approach that we hope will ultimately lead to a more mature attitude in the students.<br>3. The attitude of the teacher represents the most important variable in the successful implementation of this activity. The teacher must develop a relationship with students that allows for open and effective communication.<br>4. Avoid imposing your own value judgments about right and wrong. Refer value-based questions back to the student and let him answer his own questions when possible.<br>5. Deal with your students where they are. Understand the slang your students use. Try to replace the emotionally colored "street terms" with matter-of-fact, clinical terms when that makes it easier to use them.<br>6. Other recommended sources of information for both students and teacher, as well as possible instructional aids, are listed below:<br>Gordon, Sol. 1969 *Facts about Sex for Exceptional Youth.* N.J. Assoc. for Brain Injured Children, 61 Lincoln Street, East Orange, N.J. 07017<br>*Life* "Life Series," Educational Reprint 27. Life Education Program, Box 834, Radio City Post Office, N.Y., N.Y. 10019<br>*Life Cycle Library for Young People*, V. 1-4 1969 Parent and Child Institute, 154 East Erie St., Chicago, Illinois 60611 |

**ACHING STRATEGIES**

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**ANTICIPATED STUDENT BEHAVIORS**

**MATERIALS**

**TEACHING STRATEGIES**

Hamilton, Eleanor, 1970 *What Made Me?*
Hawthorne Books, Inc., 70 Fifth Avenue, N.Y., N.Y. 10011

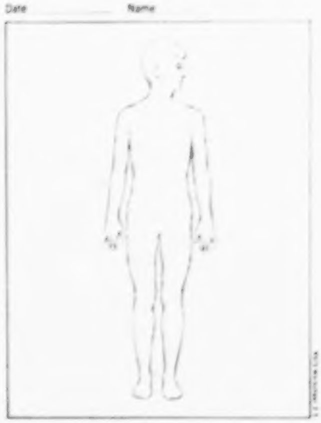
Sound filmstrips for family life and sex education:

*Human Sexuality: A Modern Approach*, produced in consultation with a committee from Sex Information and Education Council of the United States

*Family Life and Sex Education Programs*, Guidance Associates/Harcourt, Brace and World, 757 Third Ave., N.Y., N.Y. 10017

*How Babies Are Made* (Sound Filmstrips) General Learning Corporation, 3 East 54th St., N.Y., N.Y. 10022

Slide 2-21



Begin by projecting the slide (2-21) of a teenager's body outline.

Say:

> WE HAVE LEARNED THAT THERE ARE SEVERAL AREAS ON OUR BODIES THAT ARE TARGETS FOR MICROBES FROM OUR ENVIRONMENT. THROUGH THESE AREAS MICROBES ENTER OUR BODY, SOMETIMES WITH UNHAPPY RESULTS.

**CLUES**

## TEACHING STRATEGIES

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awthorne Books, Inc., 70 Fifth Avenue, N.Y.,
.Y. 10011

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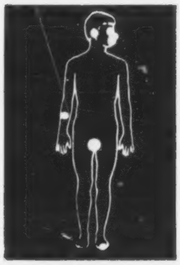
ecting the slide (2-21) of a teenager's body

LEARNED THAT THERE ARE SEVERAL AREAS
ODIES THAT ARE TARGETS FOR MICROBES
ENVIRONMENT. THROUGH THESE AREAS
ENTER OUR BODY, SOMETIMES WITH
RESULTS.

## ANTICIPATED STUDENT BEHAVIORS

Students:

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | Ask:<br>WHAT ARE SOME AREAS OF OUR BODY WHERE MICROBES ENTER? |
| | Include many students in this discussion. As an area is suggested, direct the student who contributed the thought to come to the chalkboard and circle the area he was referring to. After each area is suggested, also ask the student:<br>WHAT KIND OF DISEASE COULD A MICROBE CAUSE IF IT ENTERED THE BODY HERE? |
| | Continue to have students suggest and discuss as many entry areas as possible until all areas, except the genital area, have been discussed. |
| Slide 2-23<br> | Continue by projecting Slide 2-23 (target areas on man) and say:<br>THESE ARE THE TARGET AREAS THAT DOCTORS ARE MOST CONCERNED ABOUT. MANY DISEASES ARE CAUGHT OR SPREAD BY MICROBES WHICH ENTER THE BODY IN THESE PLACES.<br>WHAT AREA PICTURED HERE HAVE WE NOT DISCUSSED?<br>THERE IS ONE TARGET AREA ON THE BODY WHERE MICROBES MIGHT ENTER THAT WE HAVE NOT DISCUSSED. THIS IS THE AREA ON THE BODY WHERE OUR SEX ORGANS ARE LOCATED. |
| | Distribute one V. D. booklet to each student. |

## CHING STRATEGIES

EAS OF OUR BODY WHERE MICROBES

s in this discussion. As an area is
student who contributed the thought
oard and circle the area he was
each area is suggested, also ask the

EASE COULD A MICROBE CAUSE IF
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ED HERE HAVE WE NOT DISCUSSED?

RGET AREA ON THE BODY WHERE
NTER THAT WE HAVE NOT
IS THE AREA ON THE BODY
RGANS ARE LOCATED.

booklet to each student.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--recall activity on body defenses and suggest, "Nose, ears, eyes, throat, feet, any open sore, genital areas."

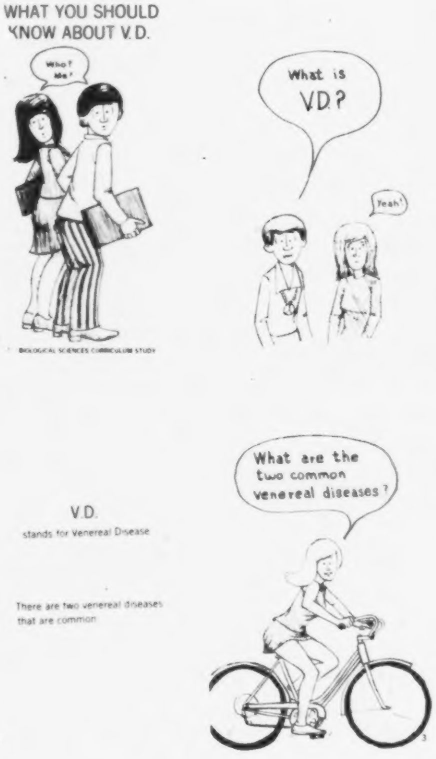
--suggest colds, sore throat, measles, mumps, flu for nose and throat; eye infections for eye; earache or ear infection for ear, etc.

--probably point to the genital area target.

ACTIVITY 2-12

(118)

## MATERIALS



WHAT YOU SHOULD
KNOW ABOUT V.D.

BIOLOGICAL SCIENCES CURRICULUM STUDY

V.D.
stands for Venereal Disease

There are two venereal diseases
that are common

Who? Me?
What is VD?
Yeah!
What are the two common venereal diseases?
2
3

## TEACHING STRATEGIES

The booklets provided are designed to be read together as a group. Only one idea about V. D. is on a page. The format provides the question on the front of the page and the answer on the back. This allows the students an opportunity to discuss the question before seeing the answer. Most pages are simple enough for students to comprehend. There are some pages, however, where students may need much help, depending on their backgrounds. Help students especially with vocabulary and pronunciation.

Go through the booklet very slowly, making sure every student understands the idea on the page before going on to the next. Discourage students from reading ahead. Have students who get the ideas quickly help explain the ideas to others. Students have a way of saying things more clearly than teachers!

Given below are some specific suggestions for various pages in the booklet. Note these carefully and remain flexible, for situations will arise that are not anticipated.

| | |
|---|---|
| Page 2: | The word venereal comes from Venus, the Roman goddess of love. Therefore, venereal disease is literally a love disease. |
| Page 3: | Before turning the page for the answer to this question, give any students who might know the answer a chance to speak. |
| Page 4: | Accept any other slang terms your students may have for gonorrhea. |
| Page 5: | Accept any other slang terms your students may have for syphilis. |
| Pages 6-7: | Again, give students a chance to answer the question before continuing. |

## ACHING STRATEGIES

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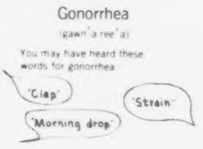
## ANTICIPATED STUDENT BEHAVIORS

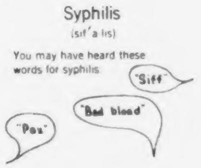


Gonorrhea

(gawn'a ree'a)

You may have heard these words for gonorrhea

"Clap"
"Strain"
"Morning drop"

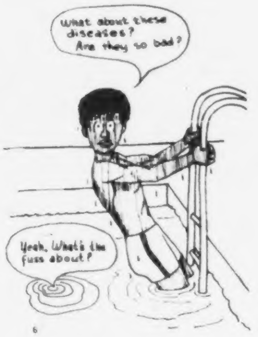


Syphilis

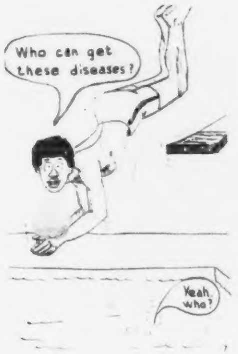
(sif'a lis)

You may have heard these words for syphilis

"Siff"
"Bad blood"
"Pox"



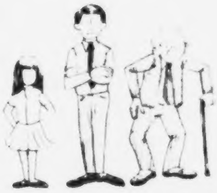
What about these diseases? Are they so bad?
Yeah, What's the fuss about?



Who can get these diseases?
Yeah, who?

## MATERIALS

Any person can get V.D. and they can get it at any age!



A person can get both gonorrhea and syphilis at the same time

8

What can happen to me if I get one of these diseases?
Yeah what?

Gonorrhea

Without a doctor's help gonorrhea can cause

Blindness
Arthritis
Sterility
Heart disease
Death

Syphilis

Without a doctor's help syphilis can cause

Blindness
Insanity
Paralysis
Heart disease
Death

11

They really cause all these awful things?
They sure do!

12

What causes these diseases?

13

## TEACHING STRATEGIES

| | |
|---|---|
| Page 9: | Allow students to attempt to answer the question before going to the next page. |
| Page 10: | Students will probably not know the word sterility. Explain it simply as not being able to have children.<br>Arthritis is a disease of the joints which can be quite painful. |
| Page 11: | Students will need help with the words paralysis and insanity. |
| Pages 12-13: | Allow students to discuss the questions before continuing. |
| Pages 14-15: | Ask students what the boy is looking through. If they do not respond, explain that it is a microscope and that it makes small things such as microbes look big. I works like a magnifier which they have used<br>Allow students to speculate on the answer to the question, "How do people get these microbes into their bodies?" |
| Page 16: | Emphasize that the only way a person can "catch" V. D. is for two moist membranes t come in contact with each other when one i infected with the microbes. |
| Page 17: | Students may be confused about how microbe can be killed by air, when they learned that there are microbes in the air. Emphasize that V. D. microbes are differen from most other microbes in this respect. |

## EACHING STRATEGIES

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## ANTICIPATED STUDENT BEHAVIORS

MICROBES!

Microbes cause many diseases. Microbes also cause venereal diseases.

Syphilis

Gonorrhea

How do people get these microbes into their bodies?

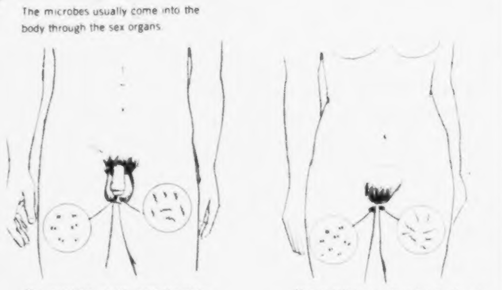
V. D. microbes are killed very quickly when they come in contact with air.

door knobs
or heavy lifting!
Then how do these microbes get into the body?

ACTIVITY 2-12

(120)

## MATERIALS



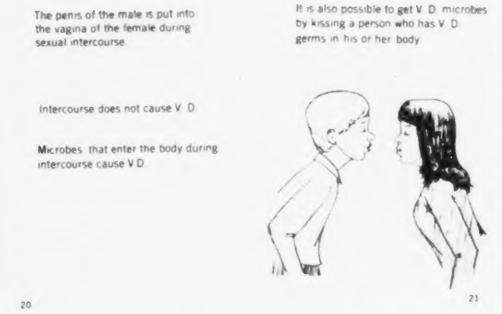
The microbes usually come into the body through the sex organs

The microbes usually enter the male through the penis

18

The microbes usually enter the female through the vagina

19



The penis of the male is put into the vagina of the female during sexual intercourse

Intercourse does not cause V D

Microbes that enter the body during intercourse cause V D

20

It is also possible to get V D microbes by kissing a person who has V D germs in his or her body

21

## TEACHING STRATEGIES

| | |
|---|---|
| Pages 18-19: | If students have not had *ME NOW*, these pictures will probably create a stir. Mai tain a normal atmosphere and discuss the male and female anatomy in a matter-of-fac way. Students will have slang words for all the things in the pictures. Accept these and give them the more accurate terminology as appropriate. The intent is not to discuss all the reproductive system here (refer to *ME NOW* if necessary) but merely to locate the place of entry of V. microbes. |
| Page 20: | The word intercourse may embarrass some students in your class, depending on thei backgrounds and the atmosphere that has prevailed to this point. Students may hav slang words such as bang, lay, screw, ball fuck, etc., for intercourse. Accept these and give them the more accurate terminolog as appropriate. The intent again is not t treat the subject of intercourse (see *ME NOW* if you wish to do so) but rather to se how V. D. is transmitted. |
| Page 21: | Tell students that this probably doesn't happen very often, but that it can happen. |
| Page 22: | Make sure your students understand these pages. |
| Page 23: | Allow for discussion of this question. |
| Page 24: | Help students to understand how large thes numbers are by comparing them to the scho city, or state populations. |

## ACHING STRATEGIES

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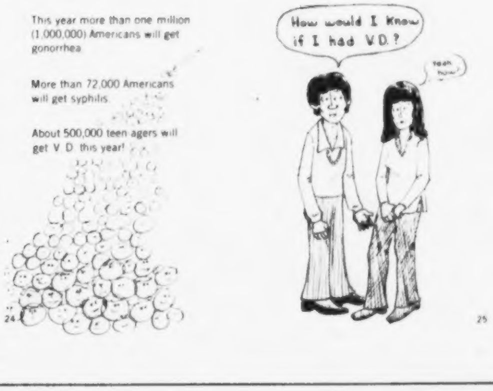
## ANTICIPATED STUDENT BEHAVIORS

If a boy or a girl has V. D. microbes in his or her body, those microbes will spread to every other person the boy or girl has intercourse with!

How common are gonorrhea and syphilis?
22
23

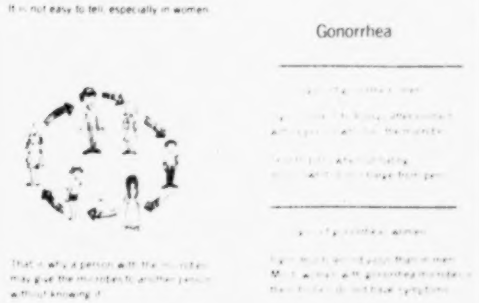


This year more than one million (1,000,000) Americans will get gonorrhea.

More than 72,000 Americans will get syphilis.

About 500,000 teen-agers will get V. D. this year!

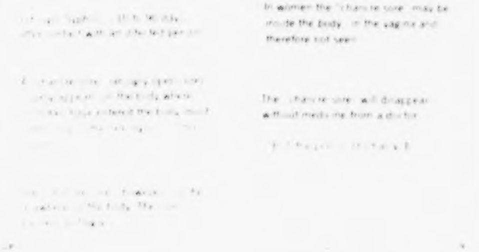
## MATERIALS



It is not easy to tell, especially in women.

Gonorrhea

That is why a person with the microbes may give the microbes to another person without knowing it.



Syphilis

In women the "chancre sore" may be inside the body, in the vagina and therefore not seen.

The "chancre sore" will disappear without medicine from a doctor.

## TEACHING STRATEGIES

Page 27: It is important to point out, especially for the boys, that the whitish discharge not semen, i.e., the white liquid dischar during intercourse or sexual excitement. This whitish discharge comes from the pen when it is not erect.

Emphasize that since a girl is not likely to know if she has V. D., a boy should fe obligated to tell all the girls he has ha contact with when he finds out that he has it.

General Comments

Pages 27-31: Go over the symptoms of the diseases very slowly for these pages tend to have more information on them than other pages. Stress the time sequence in the symptoms insure that students don't think they all appear at once. One of the big problems with the symptoms of V. D. is that they a not very clear-cut and that they resemble symptoms of other ailments. Therefore, emphasize that the most telling symptom o suspected V. D. can be found in our own minds: Did I have intercourse with or ki a person who could have V. D.?

Page 28: Remind students that contact usually means intercourse.

Page 30: Moist spots on the body would be the mout underarms, nose, around the eyes, between fingers and toes, genitals.

## ACHING STRATEGIES

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the boys, that the whitish discharge is
semen, i.e., the white liquid discharged
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rarms, nose, around the eyes, between
ers and toes, genitals.

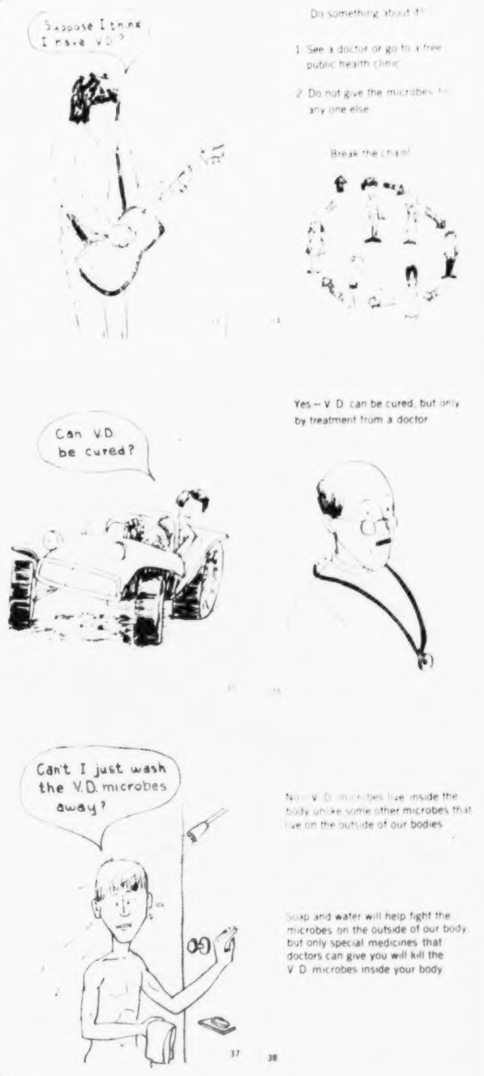
## ANTICIPATED STUDENT BEHAVIORS

A woman with syphilis microbes in her body can give the microbes to her baby before it is born.

The baby may be born dead, blind or deformed from the V. D. microbes.

ACTIVITY 2-12

## MATERIALS


Suppose I think I have V.D.?
Can V.D. be cured?
Can't I just wash the V.D. microbes away?

Do something about it!

1. See a doctor or go to a free public health clinic.
2. Do not give the microbes to any one else.

Break the chain!

Yes -- V. D. can be cured, but only by treatment from a doctor.

No -- V. D. microbes live inside the body unlike some other microbes that live on the outside of our bodies.

Soap and water will help fight the microbes on the outside of our body, but only special medicines that doctors can give you will kill the V. D. microbes inside your body.

37 38

## TEACHING STRATEGIES

Page 33: Allow discussion to see if students might already know the answer to this question.

Page 34: Students will undoubtedly ask if the doctor or health service must report them to their parents. Find out how your state handles the problem so you can give them the right answer and not cross them up! Call your local health office to find out since the laws vary from state to state.

Page 35: Allow discussion before continuing.

Page 38: Emphasize the special characteristics of V. D. microbes. They cannot live in air and therefore cannot live on the outside of the body. Because they live inside the body, they cannot be washed away once they're inside.

Page 41: Allow discussion.

Page 42: Again, if students question what contact is, specify that contact usually means intercourse.

Page 44: Your students will feel good if you tell them that they now know more about V. D. than most people. (Refer to Tallysheet 2-5.)

Page 47: Discuss student interpretations of this picture. Be sure students do not have the impression that microbes can be killed by being stepped on.

## STRATEGIES

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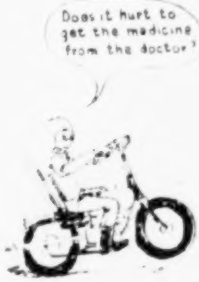
## ANTICIPATED STUDENT BEHAVIORS


Does it hurt to get the medicine from the doctor?

No, the treatment is no worse than any other shot or pill you get from a doctor.

Once you have been cured, can you ever get V.D. again?

Yes, you can get V.D. over and over again if you have contact with an infected person.

If V.D. can be cured, why doesn't it disappear?

Because most people do not know as much about V.D. as you do now!

They are afraid to go to the doctor or do not know they have V.D.

How can I help stop V.D.?

1. Go to a doctor if you think you have V.D.
2. Help others by telling them about V.D.
3. Encourage your friends to get treated if they have V.D.
4. Do not have intercourse if you think you or your partner has V.D.

Spread the word

Help stomp out V.D.!

UNIT II, CORE B

ACTIVITY 2-12: "The Environment Is Zeroing In On Me"

Teacher

Activity name suggested by class:

BSCS USE: Post ____ Tally ____ Rev ____

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) |
|---|---|
| HIGH INTEREST | → ________ ________ ________ ________ |
| MODERATE INTEREST | |
| INDIFFERENCE | |
| MODERATE RESISTANCE | |
| STRONG DISLIKE | → ________ ________ ________ ________ |
| HARD TO RATE | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:

☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

| 8. Materials used: | Worksheet | | | Game | Slides (show | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | slide nos.) | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is
☐ Of value--needs the revision suggested
☐ Worth salvaging--make major changes described
☐ Worthless --drop it

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised? Page(s) ____________:

17. On the back of this sheet indicate reactions to this activity from parents, administrators, and other teachers. Also indicate whether or not you met with any of them to inform them prior to the activity and the kind of presentation you made.

18. Did you teach ME NOW, Unit IV? ☐ Yes ☐ No: Comment.

19. Concern (or questions) about content:

20. Messages for staff (read immediately):

BSCS Evaluation: EMH Feedback Form 1c

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

UNIT II, CORE B

ACTIVITY 2-12: "The Environment Is Zeroing In On Me"

Teacher ________________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. **Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.**
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

### THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

### THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

**Me and my Environment**

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.

4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE B OBJECTIVES:

2. Realize that the body has defenses against some diseases and not others.

4. Be aware that contagious diseases are spread from organism to organism by bodily contact.

## MATERIALS

## TEACHING STRATEGIES

Activity 2-13. V. D. In Action

*There are several good films that can be used for additional information on V. D. and visual reinforcement of the ideas in the V. D. booklet. One in particular is recommended, and a detailed review of it is included in this activity.*

*Many films about venereal diseases other than the one recommended are available. However, since the film,* (V. D. Questions And Answers), *follows the booklet used in Activity 2-12 so closely, it is highly recommended.*

FOR THIS ACTIVITY

mprehend the effects of certain elements
his environment (disease, drugs,
cohol, and smoking) and some of their
cial and psychological aspects.

alize that he has some control over his
mediate environment and can obtain a
eater degree of well-being through
nscious effort.

CTIVES:

alize that the body has defenses against
me diseases and not others.

aware that contagious diseases are
read from organism to organism by bodily
ntact.

## TEACHING STRATEGIES

/. D. In Action

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a detailed review of it is included in

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vailable. However, since the film,
And Answers), follows the booklet
2-12 so closely, it is highly recom-

UNIT II. ME AS A HABITAT

CORE B. DISEASE IN PEOPLE HABITATS

ACTIVITY 2-13. V. D. IN ACTION

BSCS

## ANTICIPATED STUDENT BEHAVIORS

At the end of this activity, each student should:

- --have viewed one or more films on V. D.
- --have participated in a discussion of the film.
- --have received frank answers to questions raised after viewing the film.

ACTIVITY 2-13

⑫④

**MATERIALS**

*16mm Film projector
*Film *V. D. Questions And Answers*

Purchase from the producer,
BFA Educational Media
2211 Michigan Avenue
Santa Monica, California 90401
or
Rent from the producer or your nearby film library.

*Not furnished in materials kit

**TEACHING STRATEGIES**

*V. D. Questions And Answers*

Venereal disease is epidemic. As communicable diseases, syphilis and gonorrhea are now more common than any other contagious disease except the common cold. The epidemic is spreading most alarmingly in the 15- to 24-year-old group.

V. D. can be cured in most cases simply and with little pain. But V. D. is not cured in many cases, most often because of ignorance. Uncured V. D. can produce lifelong suffering and even death. This film sets out to dispel the ignorance that prevents treatment or that encourages spread of the disease.

Prepared under the medical supervision of Walter H. Smart, M. D., Chief, Division of V. D. Control, County of Los Angeles Health Department, the film tells the viewer the facts he will need to deal with venereal diseases.

This is a colorful, partially animated, catchy film. The film reinforces the information given to the students in the booklet they read in Activity 2-12 and parallels the booklet. Show the film once, and allow the students simply to watch it. After the first presentation, put the following list of vocabulary words on the chalkboard. These are words in the film whose meanings the students might not be familiar with. Then review with them the definitions, asking the students what the word means before you tell them:

| | |
|---|---|
| Epidemic: | a disease that spreads very quickly to many people in a city or town. |
| Ignorance: | not understanding. |
| Immune: | protected against a disease. |

| CHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| *Answers*<br>epidemic. As communicable diseases, ea are now more common than any other xcept the common cold. The epidemic armingly in the 15- to 24-year-old<br>n most cases simply and with little not cured in many cases, most often . Uncured V. D. can produce lifelong eath. This film sets out to dispel revents treatment or that encourages e.<br>edical supervision of Walter H. Smart, on of V. D. Control, County of Los tment, the film tells the viewer the o deal with venereal diseases.<br>partially animated, catchy film. the information given to the students read in Activity 2-12 and parallels he film once, and allow the students After the first presentation, put the cabulary words on the chalkboard. he film whose meanings the students r with. Then review with them the the students what the word means before<br>se that spreads very quickly to many in a city or town.<br>erstanding.<br>ed against a disease. | |

## MATERIALS

## TEACHING STRATEGIES

Communicable diseases: diseases that can be spread from person to person.

Organism: a living thing.

Inflammation: swollen, red, and sore.

Urinate: to discharge urine (yellow liquid) from the penis or vagina.

Symptom: a sign.

Urethral canal: a canal or tube through which the urine passes.

Abdomen: belly, stomach.

Discharge: a liquid or pus that comes out of a sore or some part of the body.

Womb: uterus. The place where the baby develops before it is born.

If there are any other terms in the movies that you think the students might misunderstand, or that the students themselves have a question about, treat them in a like manner.

The following terms were introduced in the booklet (WHAT YOU SHOULD KNOW ABOUT V. D.) and should need only to be reviewed:

Sterility: unable to have children.

Paralysis: unable to move.

Insanity: mentally ill.

## TEACHING STRATEGIES

diseases: diseases that can be spread
from person to person.

living thing.

swollen, red, and sore.

discharge urine (yellow liquid) from the
is or vagina.

ign.

l: a canal or tube through which the
urine passes.

ly, stomach.

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*ABOUT V. D.*) and should need only to be

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nable to move.

entally ill.

## ANTICIPATED STUDENT BEHAVIORS

| MATERIALS | TEACHING STRATEGIES |
|---|---|

Gonorrhea: one of the venereal diseases.

Syphilis: one of the venereal diseases.

Also, before showing the film a second time, discuss the main points of the film with the students. For your information and to help clarify the important concepts i the film, an outline of its contents follows.

I. History

This section emphasizes that V. D. is a very ol and common disease. Gonorrhea was widespread a long ago as the time of the pyramids, but only recently has a cure been found. Columbus's cre brought syphilis back to Europe from the New World. Both venereal diseases have spread rapidly throughout the world.

II. Communicable Diseases

V. D. is a communicable disease, just like measles, mumps, flu, and chicken pox. Most communicable diseases are spread through the ai by insects, or by food. V. D., however, is spr only by sexual contact. Therefore, anybody and everybody who has sexual contacts could contrac it.

III. Misinformation

V. D. cannot be spread by doorknobs, toilet sea eating utensils, drinking cups, water fountains lifting, uncleanliness, insects, or animals. Birth control pills do not prevent anyone from getting V. D. Nobody can tell by looking at th person next to him if he has V. D.

| HING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| the venereal diseases.<br>the venereal diseases.<br>the film a second time, discuss the<br>lm with the students. For your<br>lp clarify the important concepts in<br>of its contents follows.<br>emphasizes that V. D. is a very old<br>lisease. Gonorrhea was widespread as<br>the time of the pyramids, but only<br>a cure been found. Columbus's crew<br>ilis back to Europe from the New<br>venereal diseases have spread<br>ughout the world.<br>Diseases<br>communicable disease, just like<br>ps, flu, and chicken pox. Most<br>diseases are spread through the air,<br>or by food. V. D., however, is spread<br>ual contact. Therefore, anybody and<br>o has sexual contacts could contract<br>ion<br>be spread by doorknobs, toilet seats,<br>sils, drinking cups, water fountains,<br>cleanliness, insects, or animals.<br>l pills do not prevent anyone from<br>). Nobody can tell by looking at the<br>to him if he has V. D. | |

## MATERIALS

## TEACHING STRATEGIES

IV. Nicknames

This section presents the common slang terms given gonorrhea and syphilis, yet points out that no matter what V. D. is called, it is still, without a doubt, V. D.

V. How V. D. is Transmitted

Gonorrhea is transmitted through a tiny microbe called a gonococcus, and syphilis through a tiny microbe called a spirochete. These microbes cannot live outside the body. The only way these microbes can be transferred from one person to another is through sexual intercourse.

VI. Symptoms

The following information is given in the order listed for both gonorrhea and syphilis:

What gives the disease, how you get the disease, nicknames, the symptoms, and when they disappear, what happens after the initial symptoms are gone, the disease can be cured, and what to do if you think you have it.

VII. Conclusion

This final section of the film summarizes the important facts presented earlier and especially emphasizes that V. D. can be caught over and over again, and that it can be treated; it ends with the statement, "It's all up to you."

## TEACHING STRATEGIES

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t facts presented earlier and especially
es that V. D. can be caught over and over
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## ANTICIPATED STUDENT BEHAVIORS

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | After discussing the main points of the film and allowing free discussion, show it a second time, suggesting to the students they watch for the important things discussed.<br>CLUES TO<br>When the second viewing is completed, initiate a final discussion by asking:<br>IF YOU WERE GOING TO TELL YOUR FRIEND ABOUT V. D. SO HE TOO COULD BE INFORMED, WHAT IMPORTANT FACTS WOULD YOU TELL HIM?<br>After this activity, complete Tallysheet 2-6, rating the willingness of your class to discuss V. D. |

STRATEGIES

oints of the film and allowing
second time, suggesting to the
important things discussed.

CLUES TO SUCCESS

completed, initiate a final

ELL YOUR FRIEND ABOUT
BE INFORMED, WHAT
YOU TELL HIM?

te Tallysheet 2-6, rating the
o discuss V. D.

ANTICIPATED STUDENT BEHAVIORS

Teacher ______________________

Date ________________________

UNIT II, CORE B

TALLYSHEET 2-5: Willingness of Class to Discuss VD

ACTIVITY 2-13: "VD In Action"

To help in rewriting the strategy for this activity, additional data is needed on the attitudes and abilities of the students. In Items 1 through 4, circle the word most characteristic of your students. Comment if you wish. For Items 5 through 7, circle the word which applies to the majority of your students and add comments which you used or you think would be helpful in the strategy. If your class is divided into two general attitudes on any of these items (e.g. by sex or sophistication), circle both responses that apply and give numbers and details to explain.

1. Willingness of students to share information they already have about VD.

   Willing Reluctant Very unwilling Resistant

   (Comments and/or examples of student remarks):

2. Willingness of students to question unclear concepts, facts, or ideas.

   Willing Reluctant Very unwilling Resistant

   (Comments and/or examples of student remarks):

3. Willingness of students to attempt answering questions in the booklet.

   Willing Reluctant Very unwilling Resistant

   (Comments and/or examples of student remarks):

4. Willingness of students to use appropriate terminology.

   Willing Reluctant Very unwilling Resistant

   (Comments and/or examples of student remarks):

(Comments and/or examples of student remarks):

2. Willingness of students to question unclear concepts, facts, or ideas.

Willing Reluctant Very unwilling Resistant

(Comments and/or examples of student remarks):

3. Willingness of students to attempt answering questions in the booklet.

Willing Reluctant Very unwilling Resistant

(Comments and/or examples of student remarks):

4. Willingness of students to use appropriate terminology.

Willing Reluctant Very unwilling Resistant

(Comments and/or examples of student remarks):

5. Ability of students to grasp the population comparisons (p. 24 of VD booklet).

Not difficult Difficult Unable

(Comments and/or examples of student remarks):

6. Ability of students to grasp that a time sequence of VD symptoms exists.

Not difficult Difficult Unable

7. Did the students take their booklets home?

Most students Some students No students

(Comments and/or examples of student remarks):

UNIT II, CORE B
ACTIVITY 2-13: "V.D. In Action"

Teacher

Activity name suggested by class:

BSCS USE: Post ____ Tally ____ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) |
|---|---|
| HIGH INTEREST | → ______ ______ ______ ______ |
| MODERATE INTEREST | |
| INDIFFERENCE | |
| MODERATE RESISTANCE | |
| STRONG DISLIKE | → ______ ______ ______ ______ |
| HARD TO RATE | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:

☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

| 8. Materials used: | Worksheet |  |  | Game | Slides (show | Transparency |  |  | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | # | # | # | # | slide nos.) | # | # | # | # | # | # |
| Worthwhile as is |  |  |  |  |  |  |  |  |  |  |  |
| Revise slightly |  |  |  |  |  |  |  |  |  |  |  |
| Revise much |  |  |  |  |  |  |  |  |  |  |  |
| Worthless: omit |  |  |  |  |  |  |  |  |  |  |  |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

---

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Did you obtain and use the recommended film?
☐ Yes ☐ No: Comment.

18. Did you show the films a second time?
☐ Yes ☐ No: If not, why not?

19. Concern (or questions) about content:

20. Were students able to verbalize important facts in the "Clue To Success" (i.e. tell your friend about V.D.)?
☐ Yes ☐ No: Comment.

21. Messages for staff (read immediately):

BSCS Evaluation: EMH Feedback Form 1c

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

UNIT II, CORE B
ACTIVITY 2-13: "V.D. In Action"

Teacher ________________

REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.
☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

**Me and my Environment**

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.

3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.

4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE B OBJECTIVES:

2. Realize that the body has defenses against some diseases and not others.

3. Appreciate the need for cleanliness, especially as it applies to wounds.

4. Be aware that contagious diseases are spread from organism to organism by bodily contact.

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | Activity 2-14. Review Of Success<br>*This review of success includes two questions with accompanying slides and one set of statements for students to react to.* |

HIS ACTIVITY

tand that the human body can be
affected by both living and
ing factors in the environment.

hend the effects of certain elements
environment (disease, drugs,
l, and smoking) and some of their
and psychological aspects.

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ate environment and can obtain a
r degree of well-being through
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from organism to organism by bodily
t.

## CHING STRATEGIES

ew Of Success

*ss includes two questions with*
*nd one set of statements for*
*.*

UNIT II. ME AS A HABITAT

CORE B. DISEASE IN PEOPLE HABITATS

ACTIVITY 2-14. REVIEW OF SUCCESS

BSCS

## ANTICIPATED STUDENT BEHAVIORS

*At the end of this activity, each student should:*

- *--have completed Worksheet 2-6.*
- *--have discussed his answers to the questions and defended his choices.*

ACTIVITY 2-14

(130)

## MATERIALS

*35mm Slide projector
Slides 2-24 and 2-25
Worksheet 2-6

Date Name

*Not furnished in materials kit

## TEACHING STRATEGIES

Distribute Worksheet 2-6 and have each student put his name on it.

Project each question separately (Slides 2-24 and 2-25). Read the question and choices aloud to students. Allow ample time for them to mark their worksheets. Use the same procedure for the next question.

There is no slide for question 3. Before asking the students to turn their worksheets over, formulate a few questions to be sure students understand "agree" and "disagree." Possible questions would be:

> TELL US WHETHER YOU AGREE OR DISAGREE --
> (student's name) IS WEARING A RED BOW or
> IT IS WARM IN THIS ROOM.

Then have them turn their worksheets over. Instruct students to use a piece of paper as a marker to help them read one statement at a time. Read each statement aloud. Walk around the room to see if each student is marking a box for the statement read.

After all students have had the opportunity to answer all of the questions, collect the worksheets. Then project each slide and discuss answers with them. Have them defend their choices.

After class, tally the students' answers on Tallysheet 2-7. Consider whether the whole class needs further review or if a few individuals need special attention.

## EACHING STRATEGIES

et 2-6 and have each student put his

ion separately (Slides 2-24 and 2-25).
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m to mark their worksheets. Use the
the next question.

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collect the worksheets. Then project
cuss answers with them. Have them
es.

the students' answers on Tallysheet
ther the whole class needs further
individuals need special attention.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--mark an X on picture B of a boy going to a health clinic.

--mark an X on pictures A, B, C, D, and F.

--mark an X on pictures A, B, E, F, and G to show agreement. Mark an X on C, D, and H to show disagreement.

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | |

| ACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | |

Teacher ______________________

Date ______________________

UNIT II, CORE B
TALLYSHEET 2-6: Summary of Worksheet 2-6
ACTIVITY 2-14: "Review of Success"

Indicate student responses on Worksheet 2-6, Review of Success, by circling their responses below. For #3, circle only the responses for which the student marked "Disagree."

| | | 1 (What to do) | | | | 2 (Microbe fighters) | | | | | | 3 (VD Facts - Disagree) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Attach ID list here. | KEY: | A | [✓ B] | C | D | [✓ A] | [✓ B] | [✓ C] | [✓ D] | E | [✓ F] | A | [✓ B] | [✓ C] | [✓ D] | E | F | G | [✓ H] |
| | 01 | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| | A | B | C | D | A | B | C | D | E | F | A | B | C | D | E | F | G | H |
| TOTALS: | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ | ___ |

Does this review give an accurate indication of student understanding? ☐ Yes ☐ No
If not, what other evidence do you have of student learning?

UNIT II, CORE B

ACTIVITY 2-14: "Review Of Success"

Teacher

| BSCS USE: | Post ____ | Tally ____ | Rev ___ |
|---|---|---|---|

Activity name suggested by class:

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

| Number of students responding with: | (Number) | Name students you noted especially: |
|---|---|---|
| HIGH INTEREST | | → ________ ________ ________ ________ |
| MODERATE INTEREST | | |
| INDIFFERENCE | | |
| MODERATE RESISTANCE | | |
| STRONG DISLIKE | | → ________ ________ ________ ________ |
| HARD TO RATE | | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

|  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Revise much |  |  |  |  |  |  |  |  |  |  |  |
| Worthless: omit |  |  |  |  |  |  |  |  |  |  |  |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:

|  |  |  |  |
|---|---|---|---|
| ☐ Worthwhile --keep as is | ☐ Of value--needs the revision suggested | ☐ Worth salvaging--make major changes described | ☐ Worthless --drop it |

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed.
What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Did any students give away the answer to any question on this worksheet?
☐ No ☐ Yes: Comment.

18. Concern (or questions) about content:

19. Messages for staff (read immediately):

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

BSCS Evaluation: EMH Feedback Form 1c

UNIT II, CORE B
ACTIVITY 2-14: "Review Of Success"

Teacher ________________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

## UNIT II
## REACTIONS TO CORE B

1. Was the background information for this core adequate? ☐ Yes ☐ No
   Comment:

2. Was it clear to you why these particular activities were chosen and the direction they were leading? ☐ Yes ☐ No
   Comment:

3. Did the activities fulfill the purposes stated in the Guide for this core? ☐ Yes ☐ No
   Comment:

4. How would you increase the clarity of this core for students? (Help them understand why they are doing these activities.)

5. Is there a practical (take-home) value for your students in these activities? ☐ Yes ☐ No
6. If yes, what do you see as the "take-home" lesson? If no, what is needed?

7. In these materials, what things did your students find difficult to do?

8. Should there be more clues to success or reviews of success in this core? ☐ Yes ☐ No
   Comment:

9. Was there too much reading and too many teacher directions? ☐ Yes ☐ No
   Comment:

7. In these materials, what things did your students find difficult to do?

8. Should there be more clues to success or reviews of success in this core? ☐ Yes ☐ No
Comment:

9. Was there too much reading and too many teacher directions? ☐ Yes ☐ No
Comment:

10. Did you make use of the Planning Guide? ☐ Yes ☐ No
Comment:

11. If you could teach your way, rather than following the Guide, how would you do it?

12. Which of your students do you believe were unsuccessful in achieving the objectives of this core of activities? Explain.

**SIDE A**

NEW STUDENTS ENTERING DURING THIS CORE

| Date Entered | Last Name Name Used | Ethnic Group | Sex | Birthdate | Test date | Test | Total |
|---|---|---|---|---|---|---|---|
| | | W B S O | M F | | | W B O | |
| | | W B S O | M F | | | W B O | |
| | | W B S O | M F | | | W B O | |
| | | W B S O | M F | | | W B O | |

W = white
B = black
S = Spanish-American
O = other

W = WISC
B = Binet
O = other (name)

STUDENTS DROPPED IN THIS PERIOD

| Date Dropped | Last Name First |
|---|---|
| | |
| | |
| | |

ADDITIONAL INFORMATION ON NEW STUDENTS:

DENTS ENTERING DURING THIS CORE

| Birthdate | Test date | Test | Total | Verbal | Performance | Previous Test Score |
|---|---|---|---|---|---|---|
|  |  | W B O |  |  |  |  |
|  |  | W B O |  |  |  |  |
|  |  | W B O |  |  |  |  |
|  |  | W B O |  |  |  |  |

W = WISC
B = Binet
O = other
(name)

SIDE B

**Me and my Environment**

## UNIT II. ME AS A HABITAT

## CORE C. ENVIRONMENTAL CHOICES AND CHANCES (Drugs, Alcohol

### AIMS FOR ME AND MY ENVIRONMENT

1. DEVELOPMENT IN EACH CHILD OF A SENSE OF IDENTITY AS A PERSON WHO HAS SOME DEGREE OF CONTROL OVER AND CAN ACT ON HIS ENVIRONMENT. This will lead to a degree of self-determination based on a rational coping with situations rather than on a passive compliance or an impulsive response to problems.
2. DEVELOPMENT IN EACH CHILD OF A SUCCESS SYNDROME. More than anything else, each activity is intended to be a success experience for each child. It is the teacher's responsibility -- almost obligation -- to see that each child succeeds at a level that is challenging to his abilities and that preserves his self-respect. It is a further responsibility of the teacher to point out his achievement. The students as a group should help each individual fit what he has done into a pattern of accomplishment.
3. DEVELOPMENT IN EACH CHILD OF AN INTEREST THAT COULD BECOME A HOBBY OR AVOCATION OVER A LIFETIME (through an exposure to an array of experiences in science). It is hoped that many children will find some area -- perhaps growing plants, caring for animals, identifying flowers, collecting things, or simply enjoying outings into the country -- that they feel strongly about and can develop some competence or knowledge in. This would provide a means of self-expression, and (perhaps) allow some degree of sharing or involvement with others.
4. DEVELOPMENT IN EACH CHILD OF A SENSE OF RELATIONSHIP AND EMPATHY WITH OTHER LIVING THINGS. It is hoped that this will lead to a positive regard and caring about what affects them as individuals and as a group, because what affects them affects the community of man.
5. DEVELOPMENT IN EACH CHILD OF AN UNDERSTANDING OF ENVIRONMENTAL CONDITIONS that will lead to a sense of responsibility for the environment and actions that protect or improve it.

1. Recognize the world of microbes a
2. Understand that the human body ca
   factors in the environment.
3. Comprehend the effects of certain
   alcohol, and smoking) and some of
4. Realize that he has some control
   greater degree of well-being thro

OBJE

1. Contemplate the biological effect
2. Express his feelings and concerns
3. State knowledge of medical, socia
4. Use the knowledge in making decis

AS A HABITAT

VIRONMENTAL CHOICES AND CHANCES (Drugs, Alcohol, Smoking)

BSCS

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UNIT II GOALS

1. Recognize the world of microbes as a part of the world of living things.
2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.
3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.
4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

OBJECTIVES OF CORE C

1. Contemplate the biological effects of a dependence on tobacco, alcohol, and drugs.
2. Express his feelings and concerns about tobacco, alcohol, and drugs.
3. State knowledge of medical, social, and legal aspects of tobacco, alcohol, and drugs.
4. Use the knowledge in making decisions about tobacco, alcohol, and drugs.

UNIT II. ME AS A HABITAT

CORE C. ENVIRONMENTAL CHOICES AND CHANCES (Drugs, Alcohol, Sm

## CORE C RATIONALE

The use of tobacco and alcohol has been an established custom in our country for many years. It is still generally socially acceptable, even though the associated health hazard is becoming increasingly obvious. Today, the use (or abuse) of many other drugs is spreading throughout the United States. This increased use is accompanied by increased problems and misunderstandings. The problems are especially significant among young people. Nicotine, alcohol, and now the variety of other drugs, are becoming a part of the student's immediate environment, regardless of his economic or social background. It is the purpose of this core to help the student become better informed about the facts, especially the hazards, of tobacco, alcohol, and drug use and misuse.

The handicapped student's exposure to drugs, as well as his interest in them, is similar to that of any other students. The handicapped student may be more vulnerable, however, because of his greater difficulty in comprehending the future consequences of using drugs. These students are facing the choice now of whether or not they should use drugs. This core presents the basic information that will help them make this decision intelligently.

The biological aspects of smoking and lung function center around the actual ingredients of smoke that accumulate in the lungs. After constructing a simple apparatus in Activity 2-15 (The Smoke Screen), the student "smokes" a cigarette, using the apparatus. He is thus able to see that smoke does contain a brown material that is taken into a person's lungs as a result of inhaling. This point is reinforced when a person who smokes is invited to the class to demonstrate essentially the same thing.

## BAC

Since ours is a dr
youth will continue to
biological and social
students should be pre
sensationalism. The en
covered, not just the
quick to recognize adu
as much drugs as the o
included. Good respon
facts about drugs and

The brown materia
(The Smoke Screen,) is
that result from combu
mucous membranes linin
is inhaled. The linin
wave-like motion of ti
of mucous up and out o
cleaning is greatly im
hair. Coughing then b
are removed.

While there is a
drugs, it is the teach
at least the basic inf
examined in Activity 2-
depressants, narcotics
*Drugs Subject to Abuse*
information. It is av
Pegasus Division, 4300

## BACKGROUND INFORMATION FOR THE TEACHER

Since ours is a drug-using society, a significant number of our youth will continue to look to drugs in the hope of overcoming both biological and social discomforts. To reduce the misuse of drugs, students should be presented with the facts, without exaggeration and sensationalism. The entire spectrum of drug use and abuse should be covered, not just the most flagrant examples of abuse, for students are quick to recognize adult hypocrisy. Tobacco (nicotine) and alcohol are as much drugs as the other categories discussed; they are therefore included. Good response has been reported to instruction that gives the facts about drugs and distinguishes between use and abuse.

The brown material collected by the smoking machine in Activity 2-15 (The Smoke Screen,) is an accumulation of the tar and nicotine residues that result from combustion. A portion of such material, adheres to the mucous membranes lining the smoker's respiratory tract each time smoke is inhaled. The lining is continuously cleansing itself, through the wave-like motion of tiny hairs which continuously move a thin coating of mucous up and out of the respiratory tract. The effectiveness of the cleaning is greatly impaired because the smoke ingredients destroy the hair. Coughing then becomes the primary way in which foreign particles are removed.

While there is a vast amount of information available concerning drugs, it is the teacher's responsibility to become well informed about at least the basic information of the five categories of misused drugs examined in Activity 2-18 (Drugs, Risks Versus Rewards): stimulants, depressants, narcotics, hallucinogens, and alcohol. *Use and Misuse of Drugs Subject to Abuse* by Melvin H. Weinswig is an excellent resource of information. It is available from The Bobbs - Merrill Company, Inc., Pegasus Division, 4300 West 62nd. St., Indianapolis, Indiana 46268.

## CORE C RATIONALE (continued)

One of the best ways to inform a class about smoking is to involve the students themselves. In addition to the opportunities provided by the smoking machine, there should be further opportunities for the students to ask questions and discuss. In Activity 2-16 (Smoking In Action), the students are able to see one or more of the available films that are designed to discourage young people from smoking. It is hoped that viewing the film and participating in the suggested extensions of the activity will stimulate the students to think and talk about cigarette smoking and their health.

One of the main goals of Activity 2-18 (Drugs: Use And Misuse) is to point out to the student that although there are legitimate uses for drugs, a significant number of people have turned to drugs for a variety of nonmedical reasons. Another goal is to inform students about the effects of these drugs. While many kinds of drugs are used and misused, the five major categories of abused drugs are examined, using a series of slides as a vehicle for stimulating discussion. Reinforcement of the basic ideas presented in this core is provided in Activity 2-19 by inviting a resource person to speak to the class. Other activities are suggested, such as role-playing and creating posters about drug misuse and the effects of drugs.

## BACKGROUND

Recommended resource ma

| | |
|---|---|
| L.S.D. | No. |
| Marijuana | No. |
| Alcohol | No. |
| Narcotics | No. |
| Stimulants | No. |
| Sedatives | No. |

The above booklets can
For Drug Abuse Informat

In addition *Drugs*
*Thinking about Drinking*
the Superintendent of D
Washington, D. C. 20402.
summary of background i

king is to
opportunities
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Jse And Misuse)
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of abused
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deas pre-
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ies are
about drug

BACKGROUND INFORMATION FOR THE TEACHER (continued)

Recommended resource materials:

| | |
|---|---|
| L.S.D. | No. HSM - 71 - 9030 |
| Marijuana | No. HSM - 71 - 9029 |
| Alcohol | No. HSM - 71 - 9048 |
| Narcotics | No. HSM - 71 - 9022 |
| Stimulants | No. HSM - 71 - 9026 |
| Sedatives | No. HSM - 71 - 9027 |

The above booklets can be obtained by writing The National Clearinghouse For Drug Abuse Information, P. O. Box 1701, Washington, D. C. 20013.

In addition *Drugs of Abuse* (No. 1970-0-372-088), Price $0.40 and *Thinking about Drinking* No. 1724-0187), Price $0.35 is available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. The chart that follows is offered as a brief summary of background information.

**Me and my Environment**

UNIT II. ME AS A HABITAT

CORE C. ENVIRONMENTAL CHOICES AND CHANGES (Drugs, A

| NAME OF DRUG | NICKNAME | MISUSE AND EFFECTS | HOW TAKE |
|---|---|---|---|
| Marijuana (Hallucinogen) | Weed, reefer, joint, hash, grass, pot, tea, mary jane, Acapulco gold | Rapid heart rate, lowering of body temperature, red eyes, euphoria, distortion of time, increased appetite, psychological dependence | Smoked, sniffed, swallowed |
| Mescaline (peyote) (Hallucinogen) | Mescal button, cactus, half mood, mesc, tops | Excitability, anxiety, hallucinations, slurred speech, nausea, psychological dependence, tolerance | Swallowed, injecte |
| Psilocybin (Hallucinogen) | Sacred mushrooms, mushrooms | Excitability, irritability, restlessness, anxiety, euphoria, hallucinations, rambling speech, distortion of space or time, tolerance, psychological dependence | Swallowed |
| LSD (Hallucinogen) | Acid, pearly gates, wedding bells, mind bender, cubes, heavenly blue | Nausea, dilated pupils, excessive perspiration, rapid heart rate, severe changes in mood, visual and auditory distortion, hallucination, post-trip anxiety and depression, symptoms may reoccur later, psychological dependence, psychosis | Swallowed, dissolv sugar cubes, candy paper, liquor, on postage stamps |

A HABITAT

NMENTAL CHOICES AND CHANGES (Drugs, Alcohol, Smoking)

**BSCS**

| AND EFFECTS | HOW TAKEN | LOOKS LIKE | SOURCE |
|---|---|---|---|
| rt rate, lower- dy temperature, euphoria, dis- f time, increased psychological e | Smoked, sniffed, swallowed | Greenish, musty-colored, shredded leaf | Dried flowering or fruity top of the female hemp plant |
| lity, anxiety, ations, slurred ausea, psycho- iependence, | Swallowed, injected | Brownish powder | Peyote cactus plant |
| lity, irrita- restlessness, euphoria, hal- ons, rambling listortion of time, tolerance, ical dependence | Swallowed | White powder | Mushrooms |
| lilated pupils, perspiration, art rate, severe in mood, visual tory distortion, ation, post-trip and depression, may reoccur ychological ce, psychosis | Swallowed, dissolved in sugar cubes, candy, paper, liquor, on postage stamps | White crystalline powder | Ergot fungus of rye, manufactured chemical |

| NAME OF DRUG | NICKNAME | MISUSE AND EFFECTS | HOW TAKEN |
|---|---|---|---|
| Amphetamine (Stimulant) | Pep pill, heart, peaches, co-pilots, footballs, bennies, speed, uppers | Dry mouth, sweating, headache, diarrhea, increased heart rate, slurred speech, restlessness, loss of appetite, euphoria, psychological dependence, tolerance, psychosis | Swallowed as pills, injected |
| Cocaine (Stimulant) | Coke, snow, happy dust, joy powder, star dust, girl | Talkativeness, excitability, hyperactivity, increased pulse rate and blood pressure, risk of brain damage, undernourishment, psychological dependence, convulsions | Swallowed, sniffed, injected (usually mixed with heroin) |
| Barbiturate (Depressant) | Barbs, goof balls, downers, yellow jackets, reds, red devils, rainbows, blues, blue devils | Slurring of speech, loss of balance, staggering, impaired judgment, physical and psychological dependence, tolerance, death from overdose (especially when taken in combination with alcohol) | Swallowed as pills, may be injected |

HABITAT

MENTAL CHOICES AND CHANGES (Drugs, Alcohol, Smoking)

BSCS

| AND EFFECTS | HOW TAKEN | LOOKS LIKE | SOURCE |
|---|---|---|---|
| , sweating, head-<br>rrhea, increased<br>e, slurred speech,<br>ss, loss of<br>euphoria, psy-<br>dependence,<br>psychosis | Swallowed as pills, injected | Pills and capsules of varied shapes and colors | Manufactured chemicals |
| ness, excite-<br>yperactivity,<br>pulse rate and<br>ssure, risk of<br>age, under-<br>nt, psychologi-<br>dence, convul- | Swallowed, sniffed, injected (usually mixed with heroin) | White flaky powder | Extracted from leaves of coca bush |
| of speech, loss<br>e, staggering,<br>judgment, phy-<br>psychological<br>e, tolerance,<br>m overdose<br>ly when taken in<br>on with alcohol) | Swallowed as pills, may be injected | Pills and capsules of varied shapes and colors | Manufactured chemicals |

| NAME OF DRUG | NICKNAME | MISUSE AND EFFECTS | HOW TAKEN |
|---|---|---|---|
| Heroin (Narcotic) | H, horse, scag, white stuff, sugar, smack, junk, hard stuff | Drowsiness, stupor, euphoria, slurred speech, loss of appetite, constipation, physical and psychological dependence | Sniffing, injectin |
| Codeine (Narcotic) | School boy | Drowsiness, euphoria, slurred speech, reduced coordination, loss of appetite, physical and psychological dependence, tolerance, death from overdose | Swallowed (cough sy<br>injection |
| Morphine (Narcotic) | Dreamer, white stuff, hard stuff, hocus, miss emmy, monkey | Drowsiness, anxiety, euphoria, slurred speech, reduced coordination, loss of appetite, physical and psychological dependence | Swallowed, injected |
| Alcohol | Booze, night cap, moonshine, firewater | Drowsiness, impairs judgment and discrimination, reduced coordination and reaction time, impairs normal function of gastrointestinal tract, psychosis, brain cell damage, physical and psychological dependence, tolerance | Swallowed |

E AS A HABITAT

NVIRONMENTAL CHOICES AND CHANGES (Drugs, Alcohol, Smoking)

BSCS

| ISUSE AND EFFECTS | HOW TAKEN | LOOKS LIKE | SOURCE |
|---|---|---|---|
| wsiness, stupor,<br>horia, slurred speech,<br>s of appetite, consti-<br>ion, physical and<br>chological dependence | Sniffing, injecting | White powder | Morphine base from opium poppy |
| wsiness, euphoria,<br>rred speech, reduced<br>ordination, loss of<br>petite, physical and<br>chological dependence,<br>lerance, death from<br>rdose | Swallowed (cough syrup), injection | White or brown powder | Opium poppy |
| wsiness, anxiety,<br>horia, slurred speech,<br>duced coordination,<br>s of appetite, phy-<br>al and psychological<br>endence | Swallowed, injected | White powder, tablets, capsules | Opium poppy |
| wsiness, impairs<br>dgment and discrimina-<br>n, reduced coordination<br>reaction time, impairs<br>rmal function of gastro-<br>testinal tract, psycho-<br>, brain cell damage,<br>sical and psychologi-<br>dependence, tolerance | Swallowed | Clear liquid | Manufactured by fermenting fruit and grain |

(139) A

**Me and my Environment**

UNIT II
CORE C

# PLANNING GUIDE

NOTE: Some activities (*indicated in italics and an* ➘ be prepared several days or weeks in advance. U a teaching and preparation schedule. All suppli

| Activity Number, Page, Tentative Teaching Date | Check List of Supplies Needed | | |
|---|---|---|---|
| | Materials You Furnish | Materials in Supply Kit | (*It* |
| ➘ 2-18. Drugs: Use And Misuse<br><br>Page ______<br>Date planned ______ | Empty prescription bottles with labels as prepared by a pharmacist<br><br>Empty commercial products bottles such as:<br>Aspirin<br>Alka-Seltzer<br>Contact<br>Dristan, etc.<br><br>35mm Slide projector<br>Art supplies as needed for activity extensions | | ➘ *Start*<br>*neig*<br>*will*<br>*Try*<br>*At lea* |
| | | Slide 2-26 | Medici |
| | | Slide 2-27 | Drugs, |
| | | Slide 2-28 | Prescr |
| | | Slide 2-29 | Do You |
| | | Slide 2-30 | Stimul |
| | | Slide 2-31 | Stimul |
| | | Slide 2-32 | Doctor |
| | | Slide 2-33 | Depres |
| | | Slide 2-34 | Doctor |
| | | Slide 2-35 | Halluc |
| | | Slide 2-36 | Doctor |
| | | Slide 2-37 | Narcot |
| | | Slide 2-38 | Doctor |
| | | Slide 2-39 | Alcoho |
| | | Slide 2-40 | Doctor |
| | | Slide 2-41 | Do Peo |
| | | Slide 2-42 | People |
| | | Slide 2-43 | Curios |

# PLANNING GUIDE

activities (*indicated in italics and an* ↙ *in the margin*) must
epared several days or weeks in advance. Use this summary as
ching and preparation schedule. All supplies needed are listed.

BSCS

| of Supplies Needed | | Notes and Suggestions to Teacher |
|---|---|---|
| | Materials in Supply Kit | *(Italics and Arrow Indicate Advance Preparation Directions)* |
| es<br>d | | ↘ *Start collecting these bottles early. Ask friends and neighbors to help and you should get them quickly. You will need at least ten but the more you can get the better. Try to get a variety.* |
| s | | *At least ten needed. A variety of types is desirable.* |
| or | | |
| | Slide 2-26 | Medicine Bottles |
| | Slide 2-27 | Drugs, Use And Misuse |
| | Slide 2-28 | Prescription Medicine Bottles |
| | Slide 2-29 | Do You Use Drugs Wisely? |
| | Slide 2-30 | Stimulants, Alcohol, Hallucinogens, Depressants, Narcotics |
| | Slide 2-31 | Stimulants |
| | Slide 2-32 | Doctors Prescribe Stimulants |
| | Slide 2-33 | Depressants |
| | Slide 2-34 | Doctors Prescribe Depressants |
| | Slide 2-35 | Hallucinogens |
| | Slide 2-36 | Doctors Do NOT Supply Hallucinogens |
| | Slide 2-37 | Narcotics |
| | Slide 2-38 | Doctors Prescribe Narcotics |
| | Slide 2-39 | Alcohol |
| | Slide 2-40 | Doctors Usually Do NOT Prescribe Alcohol |
| | Slide 2-41 | Do People Misuse Drugs? |
| | Slide 2-42 | People Misuse Drugs |
| | Slide 2-43 | Curiosity, Thrills, Fun |

**Me and my Environment**

UNIT II
CORE C

# PLANNING GUIDE

NOTE: Some activities (*indicated in italics and an* ☛ *i*
be prepared several days or weeks in advance. Us
a teaching and preparation schedule. All supplie

| Activity Number, Page, Tentative Teaching Date | Check List of Supplies Needed | | |
|---|---|---|---|
| | Materials You Furnish | Materials in Supply Kit | *(Ital* |
| 2-15. The Smoke Screen<br>Page ______<br>Date planned ______ | Empty detergent bottles with caps<br>Cigarettes<br>Air freshner<br>Matches<br>Water | Filter paper<br>Funnel | *One per Stude*<br>One per<br>One per<br>One per<br>One piec<br>One |
| 2-16. Smoking In Action<br>Page ______<br>Date planned ______ | 16mm Film projector<br>Films:<br>*The Huffless, Puffless Dragon*<br>*Smoking: Past and Present*<br>*Who, Me?* | | *These fi Societ films* |
| 2-17. More Smoke(?)<br>Page ______<br>Date planned ______ | | | *Be crea activi*<br>*Articles local of* Rea *severa activi* |

## PLANNING GUIDE

BSCS

tivities (*indicated in italics and an* ↙ *in the margin*) must
ared several days or weeks in advance. Use this summary as
ing and preparation schedule. All supplies needed are listed.

| Supplies Needed | | Notes and Suggestions to Teacher (*Italics and Arrow Indicate Advance Preparation Directions*) | |
|---|---|---|---|
| | Materials in Supply Kit | | |
| | | *One per student. Start collecting these well in advance. Students, faculty, and friends can collect them for you.* | ↙ |
| | | One per pair of students | |
| | | One per class | |
| | | One per pair of students | |
| | Filter paper | One piece per pair of students | |
| | Funnel | One | |
| t | | *These films are available free from your local American Cancer Society. (Check the yellow pages for details.) Order the films several months in advance!* | ↙ |
| | | *Be creative and provide materials as you design your own activity.*<br>*Articles suggested in the activity can be secured from your local American Cancer Society or from the Reprint Editor of* Readers Digest, *Pleasantville, New York 10570. Allow several weeks to get these if you choose to do these activities.* | ↙ |

**Me and my Environment**

UNIT II
CORE C

## PLANNING GUIDE

NOTE: Some activities (*indicated in italics and an* ✔ *in*
be prepared several days or weeks in advance. Use
a teaching and preparation schedule. All supplies

| Activity Number, Page, Tentative Teaching Date | Check List of Supplies Needed | | |
|---|---|---|---|
| | Materials You Furnish | Materials in Supply Kit | (*Itali* |
| 2-18. Drugs: Use And Misuse (continued) | | Slide 2-44<br>Slide 2-45<br>Slide 2-46<br>Slide 2-47<br>Slide 2-48<br>Slide 2-49<br>Slide 2-50<br>Slide 2-51<br>Slide 2-52 | Shocking<br>To Go Alc<br>Rewards -<br>Rewards -<br>Rewards -<br>Rewards -<br>Rewards -<br>Drug Cont<br>Can You |

## PLANNING GUIDE

ties (*indicated in italics and an* ↙ *in the margin*) must
several days or weeks in advance. Use this summary as
and preparation schedule. All supplies needed are listed.

BSCS

| pplies Needed | Notes and Suggestions to Teacher (*Italics and Arrow Indicate Advance Preparation Directions*) |
|---|---|
| Materials in Supply Kit | |
| Slide 2-44 | Shocking Parents |
| Slide 2-45 | To Go Along With The Crowd |
| Slide 2-46 | Rewards - Stimulants Or Exciters |
| Slide 2-47 | Rewards - Depressants Or Relaxers |
| Slide 2-48 | Rewards - Hallucinogens |
| Slide 2-49 | Rewards - Narcotics |
| Slide 2-50 | Rewards - Alcohol |
| Slide 2-51 | Drug Control |
| Slide 2-52 | Can You Risk The Rewards? |

Me and my
Environment

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.

3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.

4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE C OBJECTIVES:

1. Contemplate the biological effects of a dependence on tobacco, alcohol, and drugs.

2. Express his feelings and concerns about tobacco, alcohol, and drugs.

3. State knowledge of medical, social, and legal aspects of tobacco, alcohol, and drugs.

4. Use the knowledge in making decisions about tobacco, alcohol, and drugs.

**MATERIALS**

**TEACHING STRATEGIES**

Activity 2-15. The Smoke Screen

*In this unit awareness of the student's environment and the student as an environment have been emphasized. In this and the following activities the student is*

R THIS ACTIVITY

rstand that the human body can be
lly affected by both living and
iving factors in the environment.

rehend the effects of certain elements
is environment (disease, drugs,
hol, and smoking) and some of their
al and psychological aspects.

ize that he has some control over his
diate environment and can obtain a
ter degree of well-being through
cious effort.

IVES:

emplate the biological effects of a
ndence on tobacco, alcohol, and drugs.

ess his feelings and concerns about
cco, alcohol, and drugs.

e knowledge of medical, social, and
l aspects of tobacco, alcohol, and
s.

the knowledge in making decisions about
cco, alcohol, and drugs.

**EACHING STRATEGIES**

e Smoke Screen

*ness of the student's environment and*
*environment have been emphasized. In*
*wing activities the student is*

UNIT II. EXPLORING OUR ENVIRONMENT

CORE C. ENVIRONMENTAL CHOICES AND CHANCES

**BSCS**

ACTIVITY 2-15. THE SMOKE SCREEN

**ANTICIPATED STUDENT BEHAVIORS**

*At the end of this activity, each student should:*

- *--have constructed and manipulated a smoking machine.*
- *--have observed the filter paper after removal from the smoking machine.*

ACTIVITY 2-15

(142)

## MATERIALS

*1 Empty detergent bottle per pair of students
Equipment to make a 1/4" hole (size of a cigarette) in detergent bottle cap
1 Circular piece of filter paper per pair of students
*1 Cigarette per pair of students
Funnel
Filter paper the diameter of the funnel
*Air freshener
*Matches
1000 ml Beaker
*Water

*Not furnished in materials kit

## TEACHING STRATEGIES

*stimulated to consider what kind of inner environment he will provide for his body. This activity introduces the smoking of tobacco as one self-imposed environmental factor that might affect the inner environment.*

NOTE: Read the Teacher Preparation section of Activity 2-17 now.

Teacher Preparation:

1. A 1/4" hole (size of a cigarette) must be made in the caps of the detergent bottles. A shop teacher might do this for you or it can be done using a very large nail to start the hole and inserting some instrument that will help to enlarge the hole (screwdriver, scissors, etc.). This should be done to each cap before class.

2. It is very effective if several kinds of cigarettes, such as filtered, nonfiltered, or menthol, are used for the smoking machines.

3. While students are operating the smoking machines, be sure to open as many windows as possible, for there will be a great deal of smoke generated from the machines. Air freshener for use afterward is also desirable.

4. For the second part of the demonstration (The Human Smoking Machine) permission from the principal should be obtained for you or another adult to smoke a cigarette in the classroom.

Begin by saying:

> WE HAVE SEEN THAT SOME MICROBES FROM OUR ENVIRONMENT ENTER OUR BODIES AND CAUSE DISEASE. ARE THERE ANY OTHER THINGS FROM OUR ENVIRONMENT THAT CAUSE DISEASE OR HARM US IN SOME WAY?

## TEACHING STRATEGIES

*onsider what kind of inner environment he*
*r his body. This activity introduces the*
*acco as one self-imposed environmental*
*ght affect the inner environment.*

e Teacher Preparation section of Activity
w.

ation:

ole (size of a cigarette) must be made in
of the detergent bottles. A shop teacher
this for you or it can be done using a
ge nail to start the hole and inserting
trument that will help to enlarge the hole
iver, scissors, etc.). This should be done
cap before class.

ry effective if several kinds of cigarettes,
filtered, nonfiltered, or menthol, are used
smoking machines.

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to open as many windows as possible, for
ll be a great deal of smoke generated from
ines. Air freshener for use afterward is
irable.

second part of the demonstration (The Human
Machine) permission from the principal should
ned for you or another adult to smoke a
e in the classroom.

g:

EEN THAT SOME MICROBES FROM OUR
NT ENTER OUR BODIES AND CAUSE
ARE THERE ANY OTHER THINGS FROM
RONMENT THAT CAUSE DISEASE OR HARM
E WAY?

## ANTICIPATED STUDENT BEHAVIORS

*--have compared the filter paper from the bottle smoking machine and the human smoking machine.*

Students:

--respond, "Drugs," "Smoking," "Pollution," "Drinking," or any other logical suggestion.

**MATERIALS**

**TEACHING STRATEGIES**

**ASK FOR OTHER IDEAS**

> If students do not suggest drugs or tobacco, ask:
>
> IS THERE ANYTHING PEOPLE CAN DO TO THEMSELVES TO CAUSE DISEASE OR DO HARM TO THEIR BODIES?

FOR THE NEXT FEW ACTIVITIES LET'S TALK ABOUT HOW DRUGS AND SMOKING MIGHT AFFECT THE ENVIRONMENT INSIDE US.

WHAT DO PEOPLE DO WHEN THEY SMOKE?

WHAT ARE CIGARETTES MADE OF?

ARE THESE THINGS NORMALLY A PART OF YOUR BODY?

WHAT DO YOU THINK WOULD HAPPEN IF THE SMOKE FROM THE TOBACCO WENT INSIDE YOUR BODY OFTEN?

WHAT PART OF YOUR BODY DO YOU THINK WOULD BE AFFECTED MOST BY THE SMOKE?

> If students do not mention lungs, throat, or mouth, ask:
>
> WHEN A PERSON IS SMOKING, WHERE DOES THE SMOKE GO AFTER IT LEAVES THE CIGARETTE?

DO YOU THINK THERE'S ANYTHING IN THE SMOKE?

A

Stu

--r

"

--r

"

--r

--r

--p

"

--p

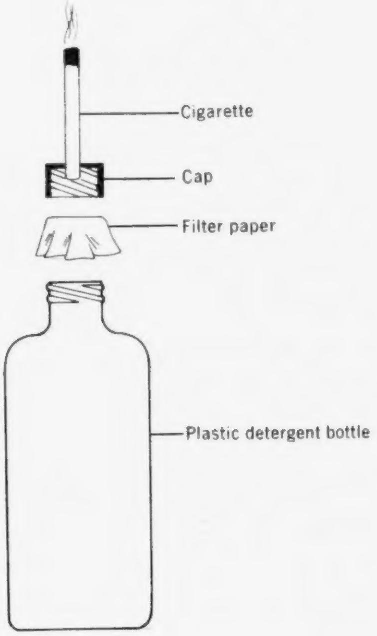
--r

--r

| HING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| **ASK FOR OTHER IDEAS** | |
| do not suggest drugs or tobacco, | |
| THING PEOPLE CAN DO TO THEMSELVES EASE OR DO HARM TO THEIR BODIES? | --respond, "Smoke," "Take drugs," "Get drunk," "Be careless," "Eat too much." |
| ACTIVITIES LET'S TALK ABOUT HOW MIGHT AFFECT THE ENVIRONMENT | |
| WHEN THEY SMOKE? | --reply, "Breathe in smoke," "Suck on a cigarette," "Inhale." |
| ES MADE OF? | --respond, "Tobacco," "Paper," "Filters." |
| NORMALLY A PART OF YOUR BODY? | --respond, "No." |
| WOULD HAPPEN IF THE SMOKE FROM INSIDE YOUR BODY OFTEN? | --predict, "Get sick," "Die," "Cancer," "Cough," "Sore throat," "Nothing." |
| BODY DO YOU THINK WOULD BE THE SMOKE? | --predict, "Lungs," "Throat," "Mouth." |
| do not mention lungs, throat, or | |
| N IS SMOKING, WHERE DOES THE SMOKE LEAVES THE CIGARETTE? | --respond, "In the mouth," "To the throat," "Lungs." |
| E'S ANYTHING IN THE SMOKE? | --respond, "Yes," "No," "Maybe." |

## MATERIALS

Diagram 2-6



## TEACHING STRATEGIES

LET'S TRY TO FIND OUT. TO DO THIS WE WILL USE A DETERGENT BOTTLE FOR A LUNG AND THIS SPECIAL PAPER TO BE THE SKIN COVERING THE INSIDE OF THE LUNG. WITH THESE THINGS WE'LL MAKE A SMOKING MACHINE.

Give the students the following directions to assemble the smoking machine. (See Diagram 2-6.)

1. Put the round piece of special paper over the top of the bottle.
2. Dampen the paper with water.
3. Carefully screw on the cap, making sure the paper isn't torn or perforated.
4. Place a cigarette in the hole in the center of th lid.
5. Light the cigarette by having one student hold a burning match to the end of it while another student squeezes the bottle.
6. Take turns "smoking" the cigarette by squeezing the bottle.

CA

Let a student photograph students "smoking" with the cigarette machine.

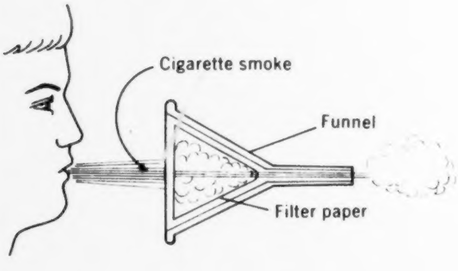
| ‹CHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| IND OUT. TO DO THIS WE WILL USE<br>TTLE FOR A LUNG AND THIS SPECIAL<br>E SKIN COVERING THE INSIDE OF THE<br>ESE THINGS WE'LL MAKE A SMOKING<br>he following directions to assemble<br>. (See Diagram 2-6.)<br>piece of special paper over the top<br>.<br>per with water.<br>ew on the cap, making sure the paper<br>perforated.<br>ette in the hole in the center of the<br>arette by having one student hold<br>ch to the end of it while another<br>zes the bottle.<br>moking" the cigarette by squeezing | |

CAMERA TIME

ograph students "smoking" with the

## MATERIALS

Diagram 2-7



## TEACHING STRATEGIES

After the cigarette has been smoked, direct the students to throw the cigarette butt into a 1000 ml beaker with some water in the bottom. Take the filter paper from the bottle and observe it carefully.

Ask:

WHAT DOES THE FILTER PAPER LOOK LIKE?

WHAT DID THE FILTER PAPER LOOK LIKE BEFORE WE STARTED?

WHERE DO YOU THINK THE BROWN COLOR CAME FROM?

DOES ANYBODY KNOW WHAT THAT BROWN STUFF IS?

THE BROWN COLORS ON THE PAPER ARE THE SOLID PARTS, THE TARS AND NICOTINE, FROM THE TOBACCO SMOKE.

Have the students keep their filter papers.

Bring an adult (a person from outside the school, if possible, and one who inhales when smoking) into the classroom to smoke a cigarette. As he smokes the cigarette, direct him to exhale the smoke into a funnel which has a piece of damp filter paper inside. (See Diagram 2-7.) When the cigarette has been smoked, remove the filter paper from the funnel and hold it next to one of the dark filter papers from the detergent bottle for comparison.

Ask:

ARE THESE TWO PAPERS ALIKE?

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| tte has been smoked, direct the students garette butt into a 1000 ml beaker with e bottom. Take the filter paper from the ve it carefully. | |
| HE FILTER PAPER LOOK LIKE? | --respond, "Ugly," "Brown," "Icky." |
| E FILTER PAPER LOOK LIKE BEFORE | --respond, "White." |
| U THINK THE BROWN COLOR CAME FROM? | --reply, "From the cigarette." |
| Y KNOW WHAT THAT BROWN STUFF IS? | --reply, "Yes," "No," "I don't know." |
| OLORS ON THE PAPER ARE THE SOLID TARS AND NICOTINE, FROM THE TOBACCO | |
| s keep their filter papers. | |
| (a person from outside the school, if ne who inhales when smoking) into the oke a cigarette. As he smokes the cigar- to exhale the smoke into a funnel which damp filter paper inside. (See Diagram cigarette has been smoked, remove the om the funnel and hold it next to one of papers from the detergent bottle for | |
| WO PAPERS ALIKE? | --should observe and compare the two papers and respond, "No." |

| MATERIALS | TEACHING STRATEGIES |
|---|---|
|  | HOW ARE THESE TWO PAPERS DIFFERENT?<br>WHO WAS THE SMOKING MACHINE THIS TIME? (Point to clean filter paper.)<br>WHY DIDN'T THE PAPER TURN BROWN WHEN THE SMOKE FROM THE PERSON'S LUNGS CAME THROUGH IT?<br>Refer to the cleaner piece of filter paper and say:<br>WHERE DO YOU THINK THE BROWN STUFF FROM THE SMOKE IS?<br>WHEN A PERSON SMOKES, THE BROWN STUFF FROM THE SMOKE STICKS TO THE LUNGS INSTEAD OF THE PAPER.<br>Make sure students understand that the brown stuff is inside the person and therefore not on the paper.<br>DOES THE BROWN STUFF FROM THE SMOKE DO ANY HARM?<br>IN OUR NEXT CLASS WE WILL SEE IF WE CAN ANSWER THAT QUESTION. |

GIVE
TIME
TO
THIN

| NG STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| GIVE STUDENTS TIME TO THINK |  |
| PAPERS DIFFERENT? | --observe the papers and reply, "One's all brown and the other isn't," "They're two different colors." |
| G MACHINE THIS TIME? (Point per.) | --reply, "A person." |
| ER TURN BROWN WHEN THE SON'S LUNGS CAME THROUGH | --infer that the person did something to the smoke. |
| ece of filter paper and say: |  |
| THE BROWN STUFF FROM THE | --reply, "Inside the person," "In the lungs." |
| ES, THE BROWN STUFF FROM THE IE LUNGS INSTEAD OF THE PAPER. |  |
| rstand that the brown stuff is therefore not on the paper. |  |
| FF FROM THE SMOKE DO ANY HARM? | --predict, "Yes," "No," "Maybe," "I don't know." |
| WE WILL SEE IF WE CAN ON. |  |

UNIT II, CORE C
ACTIVITY 2-15: "The Smoke Screen"

Teacher

Activity name suggested by class:

BSCS USE: Post ____ Tally ____ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) | |
|---|---|---|
| HIGH INTEREST | | → ________ ________ ________ ________ |
| MODERATE INTEREST | | |
| INDIFFERENCE | | |
| MODERATE RESISTANCE | | |
| STRONG DISLIKE | | → ________ ________ ________ ________ |
| HARD TO RATE | | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile ☐ Of value--needs the ☐ Worth salvaging--make ☐ Worthless

BSCS Evaluation: EMH Feedback Form 1c

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is
☐ Of value--needs the revision suggested
☐ Worth salvaging--make major changes described
☐ Worthless --drop it

---

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Were there any problems with smoking machines?
☐ No ☐ Yes: Comment.

18. Did the students conclude from the second demonstration that the 'brown stuff' stayed in the lungs?
☐ Yes ☐ No: Comment.

19. Concern (or questions) about content:

20. Messages for staff (read immediately):

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

UNIT II, CORE C
ACTIVITY 2-15: "The Smoke Screen"

Teacher ________________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.
☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

**Me and my Environment**

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.

3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.

4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE C OBJECTIVES:

1. Contemplate the biological effects of a dependence on tobacco, alcohol, and drugs.

2. Express his feelings and concerns about tobacco, alcohol, and drugs.

3. State knowledge of medical, social, and legal aspects of tobacco, alcohol, and drugs.

4. Use the knowledge in making decisions about tobacco, alcohol, and drugs.

**MATERIALS**

**TEACHING STRATEGIES**

Activity 2-16. Smoking In Action

*There are several good films that can be presented to the student for additional information on smoking. Viewing of these films, and discussing them afterward, should help the student to make a personal decision about smoking.*

ACTIVITY

that the human body can be
ffected by both living and
factors in the environment.

the effects of certain elements
ironment (disease, drugs,
nd smoking) and some of their
psychological aspects.

at he has some control over his
environment and can obtain a
gree of well-being through
effort.

e the biological effects of a
on tobacco, alcohol, and drugs.

s feelings and concerns about
lcohol, and drugs.

ledge of medical, social, and
cts of tobacco, alcohol, and

owledge in making decisions about
lcohol, and drugs.

**NG STRATEGIES**

In Action

*ilms that can be presented to the*
*nformation on smoking. Viewing*
*ussing them afterward, should*
*a personal decision about*

BSCS

UNIT II. EXPLORING OUR ENVIRONMENT

CORE C. ENVIRONMENTAL CHOICES AND CHANCES

ACTIVITY 2-16. SMOKING IN ACTION

**ANTICIPATED STUDENT BEHAVIORS**

*At the end of this activity, each student should:*

*--have viewed one or more of the films on smoking and health.*
*--have participated in discussion of the film.*

## ACTIVITY 2-16

### MATERIALS

*16mm Film projector
*1 (or more) Suggested films

*Not furnished in materials kit

### TEACHING STRATEGIES

Teacher Preparation:

1. It is recommended that you preview the films before presenting them to the class. In this way areas of the film where students might have difficulty can be identified, vocabulary words needing explanation can be spotted, and important concepts identified.

2. To be sure the films are available when you want to show them, your local American Cancer Society should be notified in advance by mail or phone when you need the films. They are usually very cooperative and more than willing to help you. Many materials, other than films, on smoking and health are also available at your request from the American Cancer Society.

The following films are available free of charge from your local American Cancer Society. The first two films listed are highly recommended and you are urged to try to obtain them. However, if these are not available any of the other films can also be used effectively.

1. *The Huffless, Puffless Dragon*, 8 minutes, color. This is a humorous, animated cartoon film, particularly effective as an introduction to a more detailed treatment of smoking and health. The film emphasizes the peer pressures and health hazards involved in cigarette smoking.

2. *Smoking: Past and Present*, 20 minutes, color. This film is open-ended and intended to stimulate classroom discussion immediately after viewing. Students in the concluding portion of this film ask excellent questions which are left unanswered. These questions would serve as an excellent springboard or lead-in for class discussion.

## NG STRATEGIES

that you preview the films before
the class. In this way areas of
dents might have difficulty can
abulary words needing explanation
d important concepts identified.

ms are available when you want to
cal American Cancer Society should
ance by mail or phone when you need
re usually very cooperative and
to help you. Many materials, other
king and health are also available
om the American Cancer Society.

available free of charge from your
ciety. The first two films listed
nd you are urged to try to obtain
are not available any of the other
ffectively.

*less Dragon*, 8 minutes, color.
, animated cartoon film, particu-
an introduction to a more
of smoking and health. The film
r pressures and health hazards
tte smoking.

*Present*, 20 minutes, color. This
and intended to stimulate class-
mediately after viewing. Students
portion of this film ask excellent
e left unanswered. These questions
excellent springboard or lead-in
on.

## ANTICIPATED STUDENT BEHAVIORS

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | (Copy down some of the questions asked by the students in the film to be included in the following discussion.)<br>The film outlines the history of tobacco and smoking, and emphasizes how cigarette smoking can damage the human lungs and heart. A teacher's guide is available with the film.<br>3. *Who, Me?* 19 1/2 minutes, color. The first section of this film is especially good because it makes the point that children do what they see their parents doing. It tells the story of how a father, who is a heavy smoker, comes to a decision to quit the habit. Some excellent footage of the amount of tar found in the lung of an emphysema patient is shown in the film. However, it is recommended that only the part of the film up to the father's decision to quit smoking should be shown. The testimonials that conclude the film are from people who have quit smoking and are primarily directed to other adult smokers.<br>After viewing the film(s) discuss the following:<br>IF THE WARNING ON CIGARETTE PACKS WERE CHANGED TO "CIGARETTE SMOKING CAUSES CANCER," DO YOU THINK PEOPLE WOULD STILL SMOKE? WHY? |

ACCE
ANS

G STRATEGIES

the questions asked by the
m to be included in the following

he history of tobacco and
izes how cigarette smoking can
ngs and heart. A teacher's guide
he film.

nutes, color. The first section
ecially good because it makes the
do what they see their parents
e story of how a father, who is a
to a decision to quit the habit.
age of the amount of tar found in
ysema patient is shown in the
is recommended that only the part
he father's decision to quit
hown. The testimonials that
re from people who have quit
marily directed to other adult

discuss the following:

ARETTE PACKS WERE CHANGED
CAUSES CANCER," DO YOU
ILL SMOKE? WHY?

**ACCEPT ALL ANSWERS**

ANTICIPATED STUDENT BEHAVIORS

ACTIVITY 2-16

⑮⓪

| MATERIALS | TEACHING STRATEGIES |
|---|---|
|  | ONE OF THE REASONS GIVEN FOR SMOKING IS THAT IT MAKES YOU LOOK AND FEEL ADULT. IS THIS A GOOD REASON?<br>HAS ADVERTISING HELPED MAKE SMOKING A NATIONAL HABIT?<br>HOW MAY YOUR PERSONAL APPEARANCE BE AFFECTED BY SMOKING?<br>HOW DOES SMOKING AFFECT MANNERS?<br>HOW MUCH DOES SMOKING COST PER DAY? PER YEAR? PER LIFETIME? |

Invite pupils in the class who say they plan to smoke (
already smoke) to explain why. Have others in the clas
explain why they plan not to smoke.

| RATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| OR SMOKING IS THAT<br>ADULT. IS THIS A<br>E SMOKING A NATIONAL<br>ARANCE BE AFFECTED<br>NNERS?<br>PER DAY? PER YEAR?<br>say they plan to smoke (or<br>. Have others in the class<br>moke. | |

HAVE YOU
INVOLVED
ALL
STUDENTS?

UNIT II, CORE C

ACTIVITY 2-16: "Smoking In Action"

Teacher

Activity name suggested by class:

BSCS USE: Post ____ Tally ____ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) | |
|---|---|---|
| HIGH INTEREST | | → ________ ________ ________ ________ |
| MODERATE INTEREST | | |
| INDIFFERENCE | | |
| MODERATE RESISTANCE | | |
| STRONG DISLIKE | | → ________ ________ ________ ________ |
| HARD TO RATE | | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:

☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
    ☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

---

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised?
    Page(s) ____________________:

17. Which film(s) did you use? Were they effective and appropriate enough to be recommended?

18. Were any of the questions listed at the end of the activity ineffective for discussion?
    ☐ No ☐ Yes: Which one(s)?

19. How many students plan to smoke?
    ☐ None ☐ 1/4 ☐ 1/2 ☐ 3/4 ☐ All: If any do, what explanation did they give?

20. Concern (or questions) about content:

21. Messages for staff (read immediately):

BSCS Evaluation: EMH Feedback Form 1c

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

UNIT II, CORE C
ACTIVITY 2-16: "Smoking In Action"

Teacher ________________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

**Me and my Environment**

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

1. Recognize the world of microbes as a part of the world of living things.
2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.
3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.
4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE C OBJECTIVES:

1. Contemplate the biological effects of a dependence on tobacco, alcohol, and drugs.
2. Express his feelings and concerns about tobacco, alcohol, and drugs.
3. State knowledge of medical, social, and legal aspects of tobacco, alcohol, and drugs.
4. Use the knowledge in making decisions about tobacco, alcohol, and drugs.

## MATERIALS

## TEACHING STRATEGIES

Activity 2-17. More Smoke(?)

*This activity is extremely unstructured by design. There are four activities suggested but not developed. We would*

CTIVITY

e world of microbes as a part
of living things.

hat the human body can be
cted by both living and
ctors in the environment.

he effects of certain elements
onment (disease, drugs,
smoking) and some of their
sychological aspects.

he has some control over his
vironment and can obtain a
ee of well-being through
fort.

the biological effects of a
n tobacco, alcohol, and drugs.

feelings and concerns about
ohol, and drugs.

dge of medical, social, and
s of tobacco, alcohol, and drugs.

ledge in making decisions about
ohol, and drugs.

**G STRATEGIES**

(?)

*unstructured by design. There*
*ted but not developed. We would*

UNIT II. EXPLORING OUR ENVIRONMENT

CORE C. ENVIRONMENTAL CHOICES AND CHANCES

BSCS

ACTIVITY 2-17. MORE SMOKE(?)

**ANTICIPATED STUDENT BEHAVIORS**

*At the end of this activity, each student should:*

--?
--?
--?

ACTIVITY 2-17

**MATERIALS**

*Provide materials as you design your activity

*Not furnished in materials kit

**TEACHING STRATEGIES**

*like you to develop at least one of the four in detail. Develop a strategy, write the activity in the format used in these materials, try it with your class, revise it, and then send a copy of the activity to BSCS.*

Our uses of your activity will be many, as you can imagine. Feel free to do more than one of the four! Develop more than one if you like, also! Be creative -- have fun!

Note that suggestions 3 and 4 require some advanced planning to secure the materials. If you do not have them available in a local library, you will have to plan on several weeks to secure the materials.

1. The numbing effect of tobacco upon the taste buds may be compared with the effect of extreme cold. Put an ice cube on the tongue of a student for several seconds and then determine his ability to taste sweet, sour, bitter, and salty substances.

2. To demonstrate the effect of smoking on heart rate, have students experiment at home on parents who smoke cigarettes. Compare the pulse rate before and after a cigarette has been smoked.

3. Read to the class "I Am Joe's Lung," Reader's Digest Reprint, April 1967 (available from American Cancer Society, or Reprint Editor, *Reader's Digest*, Pleasantville, New York 10570). This article contains an excellent description of a lung, written as if the lung were talking. Develop a strategy for reading it and describing it.

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| *elop at least one of the four in detail.*<br>*egy, write the activity in the format used*<br>*als, try it with your class, revise it, and*<br>*y of the activity to BSCS.*<br><br>r activity will be many, as you can imagine.<br>more than one of the four! Develop more<br>like, also! Be creative -- have fun!<br><br>stions 3 and 4 require some advanced<br>ure the materials. If you do not have them<br>local library, you will have to plan on<br>o secure the materials.<br><br>ng effect of tobacco upon the taste buds<br>mpared with the effect of extreme cold.<br>e cube on the tongue of a student for<br>econds and then determine his ability to<br>et, sour, bitter, and salty substances.<br><br>trate the effect of smoking on heart rate,<br>ents experiment at home on parents who<br>arettes. Compare the pulse rate before<br>a cigarette has been smoked.<br><br>ne class "I Am Joe's Lung," Reader's<br>print, April 1967 (available from<br>Cancer Society, or Reprint Editor,<br>*Digest*, Pleasantville, New York 10570).<br>cle contains an excellent description<br>, written as if the lung were talking.<br>strategy for reading it and describing it. | |

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | 4. Read to the class "What the Cigarette Commercials Don't Show," Reader's Digest Reprint, January, 1968. (See suggestion 3 for information for acquiring the reprints.) The author of this article tells of his journey to "cancer country" and describes the feelings and horrors that he experienced as a throat cancer victim. Develop a strategy for reading it and discussing it.<br>Use the following blank pages to write out the activity you develop. Include the materials required, the strategies and questions used, as well as the student behaviors. Send a copy of this to BSCS. |

## ING STRATEGIES

"What the Cigarette Commercials
er's Digest Reprint, January,
stion 3 for information for
rints.) The author of this
is journey to "cancer country"
feelings and horrors that he
hroat cancer victim. Develop
ading it and discussing it.

pages to write out the activity
e materials required, the strate-
. as well as the student behaviors.
SCS.

## ANTICIPATED STUDENT BEHAVIORS

ACTIVITY 2-17

(154)

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | |

| CHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | |

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | |

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | |

ACTIVITY 2-17

⑮⑥

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | |

| CHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | |

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | |

ING STRATEGIES

ANTICIPATED STUDENT BEHAVIORS

ACTIVITY 2-17

(158)

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | |

| CHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | |

UNIT II, CORE C

ACTIVITY 2-18: "Drugs: Use And Misuse"

Teacher

Activity name suggested by class:

BSCS USE: Post ____ Tally ____ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) | |
|---|---|---|
| HIGH INTEREST | | → ________ ________ ________ ________ |
| MODERATE INTEREST | | |
| INDIFFERENCE | | |
| MODERATE RESISTANCE | | |
| STRONG DISLIKE | | → ________ ________ ________ ________ |
| HARD TO RATE | | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet # | # | # | Game # | Slides (show slide nos.) | Transparency # | # | # | Card(s) # | Tape(s) # | Other # |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

8. Materials used:

| | Worksheet | | | Game | Slides (show | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | slide nos.) | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is
☐ Of value--needs the revision suggested
☐ Worth salvaging--make major changes described
☐ Worthless --drop it

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Based on the initial discussion of the slides, how informed did your students seem about drugs?
☐ Well Informed ☐ Somewhat Informed ☐ Misinformed ☐ Uninformed

18. How much of a problem are drugs in your school?
☐ Serious ☐ Moderate ☐ No Problem ☐ Don't know

19. Concern (or questions) about content:

20. Messages for staff (read immediately):

BSCS Evaluation: EMH Feedback Form 1c

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

UNIT II, CORE C

## ACTIVITY 2-18: "Drugs: Use And Misuse"

Teacher ________________

### REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

Me and my Environment

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.
3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.
4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE C OBJECTIVES:

1. Contemplate the biological effects of a dependence on tobacco, alcohol, and drugs.
2. Express his feelings and concerns about tobacco, alcohol, and drugs.
3. State knowledge of medical, social, and legal aspects of tobacco, alcohol, and drugs.
4. Use the knowledge in making decisions about tobacco, alcohol, and drugs.

## MATERIALS

## TEACHING STRATEGIES

Activity 2-18. Drugs: Use And Misuse

*The misuse of drugs has become a problem of great significance in our society today. By presenting a group of*

THIS ACTIVITY

stand that the human body can be
ly affected by both living and
ving factors in the environment.

hend the effects of certain elements
environment (disease, drugs,
l, and smoking) and some of their
and psychological aspects.

e that he has some control over his
ate environment and can obtain a
r degree of well-being through
ous effort.

ES:

plate the biological effects of a
ence on tobacco, alcohol, and drugs.

s his feelings and concerns about
o, alcohol, and drugs.

knowledge of medical, social, and
aspects of tobacco, alcohol, and

e knowledge in making decisions
tobacco, alcohol, and drugs.

## ACHING STRATEGIES

s: Use And Misuse

*has become a problem of great signif-*
*y today. By presenting a group of*

UNIT II. EXPLORING OUR ENVIRONMENT

CORE C. ENVIRONMENTAL CHOICES AND CHANCES

ACTIVITY 2-18. DRUGS: USE AND MISUSE

BSCS

## ANTICIPATED STUDENT BEHAVIORS

*At the end of this activity, each student should:*

*--have viewed the slide series focusing on basic drug information.*

ACTIVITY 2-18

(160)

## MATERIALS

Slides 2-26 through 2-52
*Empty prescription bottles with labels as prepared by a pharmacist
*Empty commercial products bottles such as:
Aspirin
Alka-Seltzer
Contact
Dristan
*35mm Slide projector

*Not furnished in materials kit

## TEACHING STRATEGIES

*slides designed to give factual information about drugs, it is hoped some of the ignorance, glamour, and temptatic of drugs can be avoided, if not erased, from the personal environment of the student.*

Teacher Preparation:

1. You will need a variety of empty prescription bottles for students to examine. Start collecting them early. Ask your friends, neighbors, etc., and you will get them in a hurry. Do not ask students to bring them to class.

2. It is important that you have the proper factual information in order to answer the questions students might ask. PLEASE be sure to read and familiarize yourself with the information given at the beginning of this core.

3. No matter what your personal opinions about the use or misuse of drugs may be, try to answer questions objectively and honestly.

4. Establish a trusting atmosphere in the classroom. Tell the students you are not going to try to scare them or preach to them, but merely present factual information that might be helpful in making persona decisions about drug use.

5. Preview the slides before class so that you are familiar with the flow of information.

## HING STRATEGIES

ve factual information about drugs,
he ignorance, glamour, and temptation
ed, if not erased, from the personal
udent.

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he flow of information.

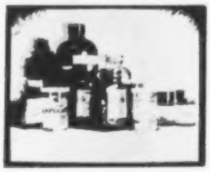
## ANTICIPATED STUDENT BEHAVIORS

--have examined medicine bottles for written instructions and information.
--have expressed his personal concerns about the use of drugs, including alcohol.
--have named the five groups of drugs which are of special concern.
--distinguish between the medical and nonmedical uses of drugs.
--recognize the need for both medical and legal control of drugs.

**MATERIALS**

**TEACHING STRATEGIES**

Slide 2-26



Begin by projecting Slide 2-26 of assorted medicine bottles.

Ask:

WOULD SOMEONE DESCRIBE WHAT THEY SEE IN THIS PICTURE?

Then say:

NOT LONG AGO WE TALKED ABOUT MICROBES. WE LEARNED THAT WHILE SOME ARE HARMLESS OTHERS CAN CAUSE DISEASE AND MAKE YOU SICK. WHEN THIS HAPPENS, IT IS OFTEN NECESSARY TO SEE A DOCTOR. WHAT MIGHT THE DOCTOR GIVE YOU TO HELP YOU GET RID OF HARMFUL MICROBES?

> If the students do not indicate that medicine, pills, or shots include drugs, say:
>
> ONE OF THE WEAPONS A DOCTOR USES IN FIGHTING MICROBES IS DRUGS. DO YOU THINK PEOPLE ALWAYS USE DRUGS THE WAY A DOCTOR TELLS THEM TO?

Slide 2-27

use and misuse

Project Slide 2-27 and say:

| ING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| de 2-26 of assorted medicine | |
| RIBE WHAT THEY SEE IN THIS | --describe slide by saying, "Bottles," "Medicines," "Pills," "Drugs." |
| LKED ABOUT MICROBES. WE<br>SOME ARE HARMLESS OTHERS<br>AND MAKE YOU SICK. WHEN<br>S OFTEN NECESSARY TO SEE<br>GHT THE DOCTOR GIVE YOU TO<br>F HARMFUL MICROBES? | --respond, "A shot," "Some medicine," "Some pills," "Drugs." |
| ts do not indicate that medicine,<br>ts include drugs, say: | |
| APONS A DOCTOR USES IN FIGHTING<br>RUGS. DO YOU THINK PEOPLE ALWAYS<br>WAY A DOCTOR TELLS THEM TO? | --give their opinion. |
| say: | |

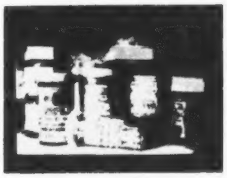
HAVE YOU INVOLVED ALL STUDENTS?

ACTIVITY 2-18

(162)

## MATERIALS

Slide 2-28



## TEACHING STRATEGIES

IN THE UNITED STATES DRUGS ARE PART OF EVERYONE'S ENVIRONMENT. SOME PEOPLE USE THEM WISELY, SOME DO NOT. SINCE OUR ENVIRONMENT DOES INCLUDE DRUGS, AND SINCE SOME OF THEM COULD BE DANGEROUS, WE ARE GOING TO LOOK AT SOME SLIDES WHICH WILL HELP US TO LEARN HOW PEOPLE USE AND MISUSE DRUGS.

Project Slide 2-28 and say:

HOW MANY OF YOU HAVE TAKEN PILLS OR MEDICINE THAT YOU GOT FROM A DOCTOR?

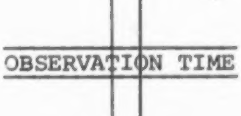
HOW DID YOU KNOW HOW MANY SPOONSFUL OF MEDICINE OR HOW MANY PILLS TO TAKE?

WHAT KIND OF INFORMATION WAS ON THE BOTTLE?

DISTRIBU

Distribute empty prescription bottles. Allow students time to exchange bottles and examine them closely.

OBSERVA

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| ED STATES DRUGS ARE PART OF EVERY-<br>ONMENT. SOME PEOPLE USE THEM WISELY,<br>. SINCE OUR ENVIRONMENT DOES INCLUDE<br>SINCE SOME OF THEM COULD BE DANGEROUS,<br>G TO LOOK AT SOME SLIDES WHICH WILL<br>LEARN HOW PEOPLE USE AND MISUSE DRUGS. | |
| 8 and say: | |
| YOU HAVE TAKEN PILLS OR MEDICINE<br>T FROM A DOCTOR? | --raise hands to indicate if they have taken medication. |
| KNOW HOW MANY SPOONSFUL OF MEDICINE<br>PILLS TO TAKE? | --reply, "My mother told me," "The doctor said," "It was on the bottle." |
| F INFORMATION WAS ON THE BOTTLE? | --respond, "How much to take," "When to take it," "Doctor's name," "My name," "A number," "I don't know." |
|  DISTRIBUTE MATERIALS | |
| prescription bottles. Allow students<br>bottles and examine them closely. | |
| OBSERVATION TIME | |

### MATERIALS

### TEACHING STRATEGIES

Ask:

WHAT INFORMATION IS ON THE LABELS?

List the responses of the students on the chalkboard so you have the following:

Date
Patient's name
Doctor's name
Instructions
Renewal code
File number
Name and address of pharmacy

Now ask:

WHY DO YOU THINK THIS INFORMATION IS ON THE LABEL?

SINCE DRUGS ARE MADE OF MANY CHEMICALS, AND SINCE ONLY DOCTORS HAVE THE TRAINING TO KNOW WHAT IS IN THE DRUGS, AND WHAT THEY SHOULD BE USED FOR, IT IS IMPORTANT THAT THE DOCTOR'S DIRECTIONS BE FOLLOWED.

DISTRIBUTE MATERIA

Now distribute containers of commercial products. Allow students time to observe and examine the containers.

A

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## IG STRATEGIES

ON THE LABELS?

students on the chalkboard so

pharmacy

IS INFORMATION IS ON THE LABEL?

E OF MANY CHEMICALS, AND
HAVE THE TRAINING TO KNOW
S, AND WHAT THEY SHOULD BE
ORTANT THAT THE DOCTOR'S
WED.

DISTRIBUTE MATERIALS

s of commercial products. Allow
and examine the containers.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond by reading the labels and stating their contents.

--respond, "So people don't take too much," "To tell you how much to take," "So you know whose it is," "Tells you when to take it," "So you know who it belongs to," "I don't know."

ACTIVITY 2-18

(164)

## MATERIALS

Slide 2-29

Slide 2-30

STIMULANTS
"exciters"
HALLUC

Slide 2-31

STIMULANTS
"exciters"

## TEACHING STRATEGIES

Ask:

ARE THESE DRUGS?

THESE ARE EXAMPLES OF MEDICINE THAT PEOPLE TAKE WITHOUT A DOCTOR'S PRESCRIPTION. ANYONE CAN BUY THESE AT THE DRUGSTORE OR GROCERY STORE. EVEN THOUGH YOU DON'T NEED A PRESCRIPTION MANY OF THESE PRODUCTS CONTAIN DRUGS WHICH MAY BE DANGEROUS IF NOT TAKEN PROPERLY. IF YOU BOUGHT AND USED ONE OF THESE PRODUCTS, HOW WOULD YOU KNOW HOW MUCH TO TAKE?

> If students do not respond with the directions on the containers, say:
>
> ON THE CONTAINERS YOU WILL FIND THE PROPER DOSAGE OR HOW MUCH TO TAKE. NOTICE THAT THE DIRECTIONS TELL YOU NOT TO TAKE MORE THAN A CERTAIN AMOUNT AT CERTAIN TIMES AND THAT IF YOU STILL FEEL SICK TO SEE A DOCTOR.

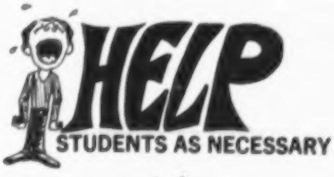
Pick one or two containers as examples and read the directions for use to the student.

YOU CAN SEE THAT IT DOESN'T MAKE ANY DIFFERENCE WHETHER THE DOCTOR PRESCRIBES THE DRUG TO YOU OR YOU BUY IT OFF THE SHELVES, THERE ARE DIRECTIONS TO FOLLOW.

Project Slide 2-29 and ask:

WHAT QUESTIONS DOES THIS SLIDE ASK?

| ACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| GS? | --respond, "Yes," "No," "Maybe." |
| MPLES OF MEDICINE THAT PEOPLE TAKE<br>TOR'S PRESCRIPTION. ANYONE CAN BUY<br>DRUGSTORE OR GROCERY STORE. EVEN<br>N'T NEED A PRESCRIPTION MANY OF<br>S CONTAIN DRUGS WHICH MAY BE DANGEROUS<br>PROPERLY. IF YOU BOUGHT AND USED ONE<br>UCTS, HOW WOULD YOU KNOW HOW MUCH TO | --respond with the directions given on the labels. |
| nts do not respond with the directions<br>ontainers, say: |  |
| ONTAINERS YOU WILL FIND THE PROPER<br>R HOW MUCH TO TAKE. NOTICE THAT THE<br>NS TELL YOU NOT TO TAKE MORE THAN A<br>AMOUNT AT CERTAIN TIMES AND THAT IF<br>L FEEL SICK TO SEE A DOCTOR. |  |
| ntainers as examples and read the<br>to the student. |  |
| HAT IT DOESN'T MAKE ANY DIFFERENCE<br>OCTOR PRESCRIBES THE DRUG TO YOU OR<br>F THE SHELVES, THERE ARE DIRECTIONS |  |
| and ask: |  |
| S DOES THIS SLIDE ASK? | --respond by reading the questions on the slide. |



## MATERIALS

Slide 2-32

Slide 2-33

relaxers

DEPRESSANTS

Slide 2-34

## TEACHING STRATEGIES

If students have difficulty reading the slides, assist them or read them together. Do not expect to elicit specific responses at this time. The questions are presented here so the student will begin to think in terms of his own use of drugs.

Say:

> THERE ARE MANY DIFFERENT KINDS OF DRUGS, SOME OF WHICH DOCTORS USE FOR TREATING ILLNESSES AND DISEASE. DRUGS CAN BE GROUPED ACCORDING TO WHAT THEY USUALLY DO TO PEOPLE. THERE ARE FIVE GROUPS THAT WE NEED TO LEARN ABOUT BECAUSE THEY ARE THE ONES WE NEED TO BE MOST CAREFUL WITH.

Project Slide 2-30 and say:

> THE FIVE KINDS OF DRUGS WE NEED TO BE MOST CONCERNED WITH ARE STIMULANTS, OR "EXCITERS," DEPRESSANTS, OR "RELAXERS," HALLUCINOGENS, OR "MIND-CHANGERS," NARCOTICS, OR "HARD DRUGS," AND ALCOHOL.

Point to words on the slide as you say them.

> LET'S DISCUSS SOME OF THESE MORE CAREFULLY TO LEARN WHY THEY ARE USED AND MISUSED.

Project Slide 2-31 and say:

> DOCTORS CALL CERTAIN DRUGS STIMULANTS, OR "EXCITERS." THIS SLIDE SHOWS WHAT SOME OF THESE DRUGS LOOK LIKE IN PILL FORM AND SOME OF THE MORE COMMON NAMES.

Assist students in reading the common names. Explain that there may be other names they are aware of.

CHING STRATEGIES

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ugs.

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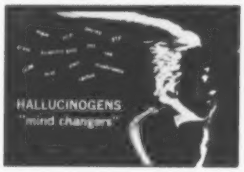
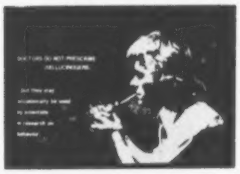
ANTICIPATED STUDENT BEHAVIORS

**MATERIALS**

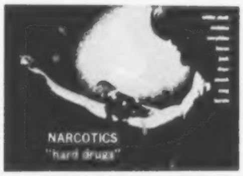
Slide 2-35


HALLUCINOGENS
"mind changers"

Slide 2-36


DOCTORS DO NOT PRESCRIBE
HALLUCINOGENS

Slide 2-37


NARCOTICS
"hard drugs"

**TEACHING STRATEGIES**

Project Slide 2-32 and read what is written on it. word depression might have to be explained. You mi explain that some people with behavior problems do things but can't help it. They take stimulants to them behave like other people. Allow discussion o all aspects of the slide.

Project Slide 2-33 and say:

> HERE ARE SOME COMMON DEPRESSANTS, OR "RELAXERS

Assist students in reading the common names and po the pictures of the drugs.

Project Slide 2-34 and read it with the students.

Project Slide 2-35 and say:

> ANOTHER GROUP OF DRUGS ARE THE HALLUCINOGENS, OR "MIND-CHANGERS."

Assist students in reading the slang names and dis with them the pictures.

Project Slide 2-36 and read it with the students.

Project Slide 2-37 and say:

> NARCOTICS ARE ONE OF THE MOST DANGEROUS GROUPS OF DRUGS. THESE ARE OFTEN REFERRED TO AS THE "HARD DRUGS."

| EACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|

and read what is written on it. The
ght have to be explained. You might
people with behavior problems do unusual
elp it. They take stimulants to help
ther people. Allow discussion on any or
slide.

HAVE YOU
INVOLVED
ALL
STUDENTS?

and say:

COMMON DEPRESSANTS, OR "RELAXERS."

reading the common names and point out
e drugs.

and read it with the students.

and say:

OF DRUGS ARE THE HALLUCINOGENS,
GERS."

reading the slang names and discuss
ures.

and read it with the students.

and say:

ONE OF THE MOST DANGEROUS GROUPS
ESE ARE OFTEN REFERRED TO AS THE

## MATERIALS

Slide 2-38

Slide 2-39

Slide 2-40

## TEACHING STRATEGIES

Assist students in reading the slang terms and direct their attention to the pictures.

Project Slide 2-38 and read it with the students.

Project Slide 2-39 and say:

> ONE THING MANY PEOPLE DON'T THINK OF AS A DRUG IS ALCOHOL. THE DRINKING OF ALCOHOL, HOWEVER, IS ONE OF THE MOST SERIOUS DRUG PROBLEMS IN THE U. S. TODAY.

Assist students in reading the slang terms.

Project Slide 2-40 and read it with the students.

Now say:

> WE HAVE TALKED ABOUT FIVE GROUPS OF DRUGS THAT WE NEED TO BE CAREFUL WITH. AS A REVIEW, CAN YOU NAME ALL FIVE OF THEM?

The students may use the terms stimulant, depressant, hallucinogen, etc. This is fine, but do not be concerned if the students do not remember the more technical terms for all of the groups. Write the groups on the chalkboard.

## ING STRATEGIES

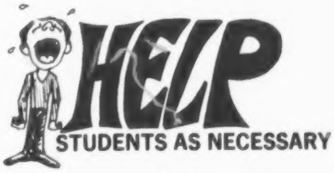
ding the slang terms and direct
pictures.

read it with the students.

say:

OPLE DON'T THINK OF AS A
THE DRINKING OF ALCOHOL,
THE MOST SERIOUS DRUG
S. TODAY.

ding the slang terms.



read it with the students.

OUT FIVE GROUPS OF DRUGS
CAREFUL WITH. AS A
AME ALL FIVE OF THEM?

e terms stimulant, depressant,
is is fine, but do not be concerned
remember the more technical terms
Write the groups on the chalkboard.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--identify relaxers, exciters, mind-changers,
hard drugs, and alcohol.

ACTIVITY 2-18

(168)

| MATERIALS | TEACHING STRATEGIES |
|---|---|

Slide 2-41

Do People Misuse Drugs?

Project Slide 2-41 and ask:

> ARE THE ONLY PEOPLE WHO USE DRUGS THOSE WHO GET THEM FROM A DOCTOR?
>
> THERE ARE MANY PERSONS, INCLUDING YOUNG PEOPLE, WHO MISUSE DRUGS. IN OTHER WORDS, THEY TAKE DRUGS ON THEIR OWN WITHOUT A DOCTOR'S PRESCRIPTION. WHY DO YOU SUPPOSE PEOPLE DO THIS?

Slide 2-42

Then say:

> THERE ARE MANY REASONS WHY PEOPLE TURN TO DRUGS. THE REASONS MAY NOT BE THE SAME FOR ALL PEOPLE.

| NG STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| sk: |  |
| WHO USE DRUGS THOSE WHO<br>TOR? | --respond with statements that should indicate their awareness of drug abuse. |
| ONS, INCLUDING YOUNG PEOPLE,<br>IN OTHER WORDS, THEY TAKE<br>ITHOUT A DOCTOR'S PRESCRIPTION.<br>PEOPLE DO THIS? | --respond with opinions about the possible reasons for taking drugs. Allow free discussion. |
| ONS WHY PEOPLE TURN TO<br>MAY NOT BE THE SAME FOR |  |

ACCEPT ALL ANSWERS

HAVE YOU INVOLVED ALL STUDENTS?

## MATERIALS

Slide 2-43

curiosity
thrills
fun

Slide 2-44

shocking parents

Slide 2-45

## TEACHING STRATEGIES

Project Slide 2-42 and say:

> ALL THE REASONS [illegible] BASICALLY THE SAME. PEOPLE MISUSE DRUGS TO CHANGE HOW THEY THINK, HOW THEY FEEL, HOW THEY ACT. SO THAT WE WILL BETTER UNDERSTAND WHY PEOPLE MISUSE DRUGS, LET'S LOOK MORE CLOSELY AT THE REASONS COMMONLY GIVEN FOR WHY PEOPLE TAKE DRUGS ON THEIR OWN.

Project Slide 2-43 and say:

> WHAT REASONS FOR TAKING DRUGS DO THESE PICTURES SUGGEST?

**GIVE SE**
**STUDENTS**
**TO RES**

Again encourage discussion. Add "rebellion," "shocking parents," and "protest" to the list on the chalkboard.

Project Slide 2-45. Repeat the strategy given for Slide 2-44, this time adding "escape," "pressure," and "going along with the crowd" to the list of reasons. Be sure students understand the meaning of these terms before continuing.

Say:

> WE HAVE JUST DISCUSSED THE MAIN REASONS WHY PEOPLE BEGIN TO USE DRUGS. THEY ARE SEARCHING FOR THINGS OR FEELINGS THEY THINK THEY DO NOT HAVE. DO DRUGS ALWAYS DO FOR A PERSON WHAT HE EXPECTS?

## ING STRATEGIES

say:

E BASICALLY THE SAME. PEOPLE
ANGE HOW THEY THINK, HOW THEY
. SO THAT WE WILL BETTER
PLE MISUSE DRUGS, LET'S LOOK
E REASONS COMMONLY GIVEN FOR
UGS ON THEIR OWN.

say:

AKING DRUGS DO THESE PICTURES

GIVE SEVERAL
STUDENTS A CHANCE
TO RESPOND

ion. Add "rebellion," "shocking
to the list on the chalkboard.

peat the strategy given for Slide
'escape," "pressure," and "going
o the list of reasons. Be sure
meaning of these terms before

SSED THE MAIN REASONS WHY
E DRUGS. THEY ARE SEARCHING
INGS THEY THINK THEY DO NOT
WAYS DO FOR A PERSON WHAT

## ANTICIPATED STUDENT BEHAVIORS

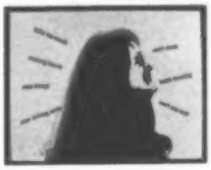
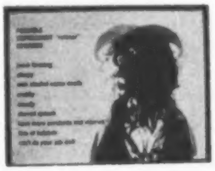
Students:

--participate in a discussion of what the pictures represent.

--respond with varying opinions related to the question asked.

ACTIVITY 2-18

⑰⓪

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | Allow discussion.<br>WHAT USUALLY OCCURS IS THAT BAD THINGS BEGIN TO HAPPEN TO A PERSON WHO USES DRUGS. A PERSON WHO USES STIMULANTS, OR "EXCITERS," MAY BEGIN TO HAVE SERIOUS PROBLEMS. |
| Slide 2-46<br> | Project Slide 2-46 and say:<br>PEOPLE WHO USE "EXCITERS," OR STIMULANTS, ARE USUALLY REWARDED. BUT WHAT ARE THOSE REWARDS?<br>Assist students in reading the symptoms of stimulant abuse. Allow for discussion time. |
| | Say:<br>SOME OF THE EFFECTS OF USING "RELAXERS," OR DEPRESSANTS, ARE THESE. |
| Slide 2-47<br> | Project Slide 2-47 and again assist students in reading the slide, also allowing for any free discussion.<br>Then say:<br>USERS OF HALLUCINOGENS, OR "MIND-CHANGERS," ARE ALSO "REWARDED." |

IN

HING STRATEGIES

ALLOW SOME HUMOR HERE

RS IS THAT BAD THINGS BEGIN
RSON WHO USES DRUGS. A
TIMULANTS, OR "EXCITERS," MAY
IOUS PROBLEMS.

say:

XCITERS," OR STIMULANTS, ARE
BUT WHAT ARE THOSE REWARDS?

ding the symptoms of stimulant
ussion time.

INVOLVE YOUR SLOWEST STUDENTS

TS OF USING "RELAXERS," OR
THESE.

again assist students in reading
ng for any free discussion.

OGENS, OR "MIND-CHANGERS," ARE

ANTICIPATED STUDENT BEHAVIORS

Students:

--read the symptoms of abuse given on the slide.

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| Slide 2-48<br> | Project Slide 2-48 and say:<br>IT IS TOO EARLY FOR SCIENTISTS TO TELL EXACTLY WHAT ALL THE RESULTS ARE FROM USING MARIJUANA, BUT USERS OF THE OTHER "MIND-CHANGERS" LIKE LSD, MESCALINE, AND PEYOTE CAN EXPECT THE CHANGES THAT YOU SEE ON THE SLIDE.<br>Assist students in reading and discussing the abuse symptoms. |
| Slide 2-49<br> | Project Slide 2-49 and say:<br>"HARD DRUG," OR NARCOTICS, USERS MAY HAVE THESE THINGS TO LOOK FORWARD TO.<br>Assist students in reading and discussing the slide. |
| Slide 2-50<br> <br>POSSIBLE<br>ALCOHOL<br>REWARDS | Project Slide 2-50 and say:<br>OF ALL THE DRUGS WE'VE TALKED ABOUT, ALCOHOL IS THE ONE DRUG USED AND MISUSED BY MORE PEOPLE THAN ANY OTHER. DEPENDING ON HOW MUCH IS USED, AND HOW OFTEN, THESE ARE THE THINGS THAT MAY HAPPEN. |

| ACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  |  |

and say:

LY FOR SCIENTISTS TO TELL EXACTLY RESULTS ARE FROM USING MARIJUANA, THE OTHER "MIND-CHANGERS" LIKE LSD, D PEYOTE CAN EXPECT THE CHANGES ON THE SLIDE.

reading and discussing the abuse

DON'T ASK LEADING QUESTIONS

and say:

OR NARCOTICS, USERS MAY HAVE TO LOOK FORWARD TO.

reading and discussing the slide.

HAVE YOU INVOLVED ALL STUDENTS?

and say:

UGS WE'VE TALKED ABOUT, ALCOHOL UG USED AND MISUSED BY MORE NY OTHER. DEPENDING ON HOW MUCH HOW OFTEN, THESE ARE THE THINGS EN.

ACTIVITY 2-18
(172)

**MATERIALS**

**TEACHING STRATEGIES**

Assist students in reading the slide, allow ample time for discussion.

Now say:

> BECAUSE THERE ARE SO MANY PEOPLE WHO MISUSE DRUGS, IT IS NECESSARY THAT DRUGS BE CONTROLLED TO SEE THAT THERE IS AS LITTLE MISUSE AS POSSIBLE. THERE ARE SEVERAL WAYS THAT DRUGS ARE CONTROLLED.

Slide 2-51

Project Slide 2-51 and ask:

> WHAT METHODS ARE USED TO KEEP PEOPLE FROM MISUSING DRUGS?

Assist students in reading the slide and allow time for discussion.

INVOLV
SLOW
STUD

> DRUGS, LIKE MANY OTHER THINGS WE HAVE TALKED ABOUT, ARE PART OF OUR ENVIRONMENT. THESE THINGS IN OUR ENVIRONMENT ARE DIFFERENT FROM ALL THE OTHERS, HOWEVER, BECAUSE WHETHER OR NOT WE HAVE ANYTHING TO DO WITH THEM IS FOR EACH ONE OF US TO DECIDE.

## CHING STRATEGIES

eading the slide, allow ample time

RE SO MANY PEOPLE WHO MISUSE
CESSARY THAT DRUGS BE CONTROLLED
RE IS AS LITTLE MISUSE AS
E ARE SEVERAL WAYS THAT DRUGS

nd ask:

E USED TO KEEP PEOPLE FROM

eading the slide and allow time for

INVOLVE YOUR
SLOWEST
STUDENTS

Y OTHER THINGS WE HAVE TALKED
OF OUR ENVIRONMENT. THESE
NVIRONMENT ARE DIFFERENT FROM
HOWEVER, BECAUSE WHETHER OR
THING TO DO WITH THEM IS FOR
TO DECIDE.

## ANTICIPATED STUDENT BEHAVIORS

Students:

--respond by reading statements given on the slide.

## MATERIALS

Slide 2-52

Can you risk the possible rewards of misusing drugs?

## TEACHING STRATEGIES

Project Slide 2-52 and ask:

ARE THE RISKS WORTH THE REWARDS?

DON'T ASK LEADING QUESTIONS HERE

Now say:

WE HAVE TALKED ABOUT WHY PEOPLE USE DRUGS AND WHAT DRUGS DO WHEN THEY ARE MISUSED. WHAT ARE ALL THE REASONS YOU REMEMBER THAT PEOPLE USE DRUGS?

Now ask the following series of questions and show each slide listed after students have had a chance to recall the information.

GIVE STUDENTS TIME TO THINK

WHAT CAN HAPPEN TO PEOPLE WHO USE "EXCITERS" (STIMULANTS)?

WHAT CAN HAPPEN TO PEOPLE WHO USE "RELAXERS" (DEPRESSANTS)?

## AN

Stud

--re

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--re

**STRATEGIES**

:

HE REWARDS?

DON'T ASK LEADING QUESTIONS
HERE

WHY PEOPLE USE DRUGS AND
EY ARE MISUSED. WHAT
OU REMEMBER THAT PEOPLE

es of questions and show each
s have had a chance to recall

GIVE STUDENTS
TIME
TO
THINK

OPLE WHO USE "EXCITERS"

OPLE WHO USE "RELAXERS"

**ANTICIPATED STUDENT BEHAVIORS**

Students:

--recall the reasons that were discussed.

--recall symptoms of abuse given on Slide 2-46.

--recall symptoms of abuse given on Slide 2-47.

ACTIVITY 2-18

(174)

| MATERIALS | TEACHING STRATEGIES |
|---|---|
| | WHAT CAN HAPPEN TO PEOPLE WHO USE "MIND-CHANGERS" (HALLUCINOGENS)?<br>WHAT CAN HAPPEN TO PEOPLE WHO USE "HARD DRUGS" (NARCOTICS)?<br>WHAT CAN HAPPEN TO PEOPLE WHO USE ALCOHOL? |

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| HAPPEN TO PEOPLE WHO USE "MIND-CHANGERS" OGENS)? | --recall symptoms of abuse given on Slide 2-48. |
| HAPPEN TO PEOPLE WHO USE "HARD DRUGS" S)? | --recall symptoms of abuse given on Slide 2-49. |
| HAPPEN TO PEOPLE WHO USE ALCOHOL? | --recall symptoms of abuse given on Slide 2-50. |

UNIT II, CORE C

ACTIVITY 2-17: "More Smoke(?)"

Activity name suggested by class:

Teacher

BSCS USE: Post ____ Tally ____ Rev ___

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with:

| | (Number) |
|---|---|
| HIGH INTEREST | |
| MODERATE INTEREST | |
| INDIFFERENCE | |
| MODERATE RESISTANCE | |
| STRONG DISLIKE | |
| HARD TO RATE | |

Name students you noted especially:

→ ________ ________ ________ ________

→ ________ ________ ________ ________

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

BSCS Evaluation: EMH Feedback Form 1c

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

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11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is
☐ Of value--needs the revision suggested
☐ Worth salvaging--make major changes described
☐ Worthless --drop it

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed. What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Concern (or questions) about content:

18. Messages for staff (read immediately):

**Have you answered each question, attached annotated Guide, your revisions, student work, etc.?**

SIDE A

UNIT II, CORE C
ACTIVITY 2-17: "More Smoke(?)"

Teacher ________________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
4. Describe the revisions you said were needed in answering the questions on the other side of this form.
5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

### THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings
☐ what you would do differently or avoid next time.

### THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

OBJECTIVE FOCUS FOR THIS ACTIVITY

UNIT GOALS:

2. Understand that the human body can be vitally affected by both living and nonliving factors in the environment.

3. Comprehend the effects of certain elements in his environment (disease, drugs, alcohol, and smoking) and some of their social and psychological aspects.

4. Realize that he has some control over his immediate environment and can obtain a greater degree of well-being through conscious effort.

CORE C OBJECTIVES:

1. Contemplate the biological effects of a dependence on tobacco, alcohol, and drugs.

2. Express his feelings and concerns about tobacco, alcohol, and drugs.

3. State knowledge of medical, social, and legal aspects of tobacco, alcohol, and drugs.

4. Use the knowledge in making decisions about tobacco, alcohol, and drugs.

## MATERIALS

## TEACHING STRATEGIES

Activity 2-19. A First-Hand Drug Report

*As a culmination for this core, this activity capitalizes on a resource person who visits the class to give expert*

FOR THIS ACTIVITY

derstand that the human body can be
tally affected by both living and
nliving factors in the environment.

mprehend the effects of certain elements
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CTIVES:

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gal aspects of tobacco, alcohol, and
ugs.

the knowledge in making decisions about
acco, alcohol, and drugs.

|  |  |
|---|---|
| UNIT II. | EXPLORING OUR ENVIRONMENT |
| CORE C. | ENVIRONMENTAL CHOICES AND CHANCES |
| ACTIVITY 2-19. | A FIRST-HAND DRUG REPORT |

BSCS

**TEACHING STRATEGIES**

First-Hand Drug Report

*for this core, this activity capitalizes*
*son who visits the class to give expert*

**ANTICIPATED STUDENT BEHAVIORS**

*At the end of this activity, each student should:*

*--have asked a question about drugs.*
*--have participated in a review of drug information.*

ACTIVITY 2-19

**MATERIALS**

**TEACHING STRATEGIES**

*advice and experiences about drugs. A personal report of this kind can dramatize the information presented in earlier activities.*

Teacher Preparation:

1. Arrange for a resource person to visit your class to talk about drugs. This might be a doctor, social worker, former addict or abuser, policeman, judge, lawyer, pharmacist, or public health nurse.

2. Provide your guest speaker with the seven questions listed below. Be sure to explain the needs of your class for simple graphic description and pictures or materials for illustration when possible.

3. List the seven questions below on the chalkboard.

    1. WHAT HAPPENS TO THE ADDICT IF HE STOPS TAKING THE DRUGS?

    2. WHAT EFFECT, IF ANY, DOES USING DRUGS HAVE ON CRIME?

    3. DO LAWS HELP?

    4. WOULD YOU CHANGE ANY OF THE LAWS OR PUNISHMENTS?

    5. WHAT WOULD YOU SUGGEST TO HELP LESSEN THE DRUG PROBLEM?

## CHING STRATEGIES

*ces about drugs.  A personal report of*
*tize the information presented in*

:

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PPENS TO THE ADDICT IF HE STOPS
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CRIME?

HELP?

OU CHANGE ANY OF THE LAWS OR
ENTS?

ULD YOU SUGGEST TO HELP LESSEN
G PROBLEM?

## ANTICIPATED STUDENT BEHAVIORS

*--have met and discussed drug use and misuse with a resource person.*
*--have made a poster depicting drug misuse.*
*Optional:*
*--have participated in or observed role-playing situations involving drugs.*
*--have examined drug advertisements or collected news articles related to drugs.*

## MATERIALS

## TEACHING STRATEGIES

6. WHAT IS A HABIT? WHAT ARE SOME HABITS?

7. WHAT RESPONSIBILITIES DO PARENTS HAVE CONCERNING DRUGS?

Part I

Your arrangements for the visit by the resource person should be completed before you begin this activity. Start by asking:

> DO YOU THINK A (guest speaker -- doctor, lawyer, etc.) WOULD KNOW MUCH ABOUT DRUGS?
>
> (Guest's name), WHO IS A (role) HAS AGREED TO VISIT OUR CLASS (tomorrow) AND TELL US SOME OF HIS EXPERIENCES RELATED TO DRUGS.
>
> CAN YOU THINK OF SOME QUESTIONS YOU WOULD LIKE TO ASK HIM?

**ASK FOR OTHER IDEAS**

List the students' questions on the chalkboard. Call on each student. Some may be interested in a question already mentioned, but give each child a chance to express an interest.

Say:

> THESE ARE ALL GOOD QUESTIONS. DO ANY OF YOU ALREADY KNOW THE ANSWERS TO SOME OF THEM?

A

Stu

--r

--s

--v

| CHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
| | Students: |
| A HABIT? WHAT ARE SOME HABITS? | |
| PONSIBILITIES DO PARENTS HAVE<br>NG DRUGS? | |
| or the visit by the resource person<br>before you begin this activity. | |
| (guest speaker -- doctor,<br>WOULD KNOW MUCH ABOUT DRUGS? | --respond, "Yes," "Probably." |
| , WHO IS A (role) HAS AGREED TO<br>S (tomorrow) AND TELL US SOME OF<br>S RELATED TO DRUGS. | |
| OF SOME QUESTIONS YOU WOULD LIKE | --suggest questions they would like answered. |
| uestions on the chalkboard. Call on<br>may be interested in a question<br>ut give each child a chance to express | |
| OOD QUESTIONS. DO ANY OF YOU<br>HE ANSWERS TO SOME OF THEM? | --various responses. |

**ASK FOR OTHER IDEAS**

**MATERIALS**

**TEACHING STRATEGIES**

**GIVE SEVE**
**STUDENTS A**
**TO RESP**

Call attention to the seven questions you listed on the chalkboard earlier. Say:

> SOME OTHER QUESTIONS WE MIGHT ASK (guest's name) ARE THESE.

Read the questions and eliminate any which they have already asked. Discuss any information the students presently have about them.

After discussing these questions, ask:

> DO YOU SUPPOSE OUR VISITOR MIGHT LIKE TO ASK US SOME QUESTIONS?
>
> MAYBE (guest's name) WILL WANT TO FIND OUT WHAT WE ALREADY KNOW ABOUT DRUGS. WHAT WILL YOU TELL HIM?

Review the five drug groups, effects of drugs, reasons for using drugs.

Part II. Visit By Resource Person

On the day of the visit allow extra time so that discussion can continue if your guest is willing and students are interested.

Should you have time remaining and the resource person is a doctor or social worker, students may have questions to ask about V. D. and other health concerns. Inform the guest beforehand so he can be prepared to answer such questions.

| TEACHING STRATEGIES | ANTICIPATED STUDENT BEHAVIORS |
|---|---|
|  | Students: |
| **GIVE SEVERAL STUDENTS A CHANCE TO RESPOND** |  |
| to the seven questions you listed on the ier. Say: |  |
| QUESTIONS WE MIGHT ASK (guest's name) |  |
| ons and eliminate any which they have Discuss any information the students about them. |  |
| g these questions, ask: |  |
| POSE OUR VISITOR MIGHT LIKE TO ASK ESTIONS? | --respond, "Maybe," "I don't know." |
| st's name) WILL WANT TO FIND OUT READY KNOW ABOUT DRUGS. WHAT WILL IM? | --respond by telling about drugs. |
| drug groups, effects of drugs, reasons . |  |
| By Resource Person |  |
| he visit allow extra time so that continue if your guest is willing and terested. |  |
| time remaining and the resource person is ial worker, students may have questions to and other health concerns. Inform the d so he can be prepared to answer such |  |

## MATERIALS

*Magazines, many and a large variety

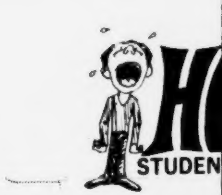
*Not furnished in materials kit

## TEACHING STRATEGIES

Part III.

The day after the visit, allow students a chance to talk about ideas presented. You may want to review briefly the list of questions and the students' questions, along with the answers that were obtained.

After discussion, students might enjoy role-playing some of the situations below, or others suggested by your guest.



Role-Playing

Present these situations to your students. Ask for volunteers or select students to portray the characters in the situation.

1. One student approaches another student with some pills, and urges him to take some. The second student declines. The first student argues reasons for taking the pills, the second student argues reasons against taking them.
2. You've been using drugs for some time and your habit is so strong you just have to have more today. The trouble is you have no money. What are you going to do today? Tomorrow? Next week?
3. Your mother finds a joint in your room. She tells your father. Both are very much against drugs. They ask you what you are doing with pot in your room.

## CHING STRATEGIES

isit, allow students a chance to talk
ted. You may want to review briefly
ns and the students' questions, along
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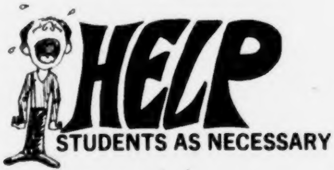

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Both are very much against drugs.
what you are doing with pot in your

## ANTICIPATED STUDENT BEHAVIORS

ACTIVITY 2-19

(180)

## MATERIALS

- *Tagboard
- *Scissors
- *Crayons
- *Glue
- *Colored paper
- *Assorted recycled materials (for collage, montage, or poster construction)

*Not furnished in materials kit

## TEACHING STRATEGIES

Some projects your students might be interested in doing are suggested below. Use them as student interest dictates.

Case Histories

Collect, or have students collect, clippings from magazines and newspapers telling of drug incidences, overdoses, or diarylike stories. Students might also make a class scrapbook of clippings about drugs.

Advertisements

Have students clip and study drug, tobacco, and alcohol advertisements from newspapers and magazines. Examine them for honesty, appeal, warnings given, information given about the product, etc.

To help assess the student's attitude and comprehension of some of the concepts in this core, the student will construct a poster.

Have large sheets of tagboard, scissors, crayons, colored pencils, glue, colored paper, and assorted recycled materials (string, thread, candy papers, styrofoam cups, empty prescription bottles) available.

## HING STRATEGIES

## ANTICIPATED STUDENT BEHAVIORS

HAVE YOU
INVOLVED
ALL
STUDENTS?

udents might be interested in doing
Use them as student interest

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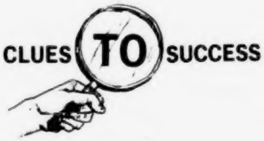

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d paper, and assorted recycled
read, candy papers, styrofoam cups,
ttles) available.

### MATERIALS

### TEACHING STRATEGIES

Instruct the students to think of what they have learne about the misuse of alcohol, tobacco, and drugs.

Say:

> WHAT COULD YOU TELL YOUR FRIENDS AND OTHER PEOPLE YOUR AGE TO HELP THEM DECIDE NOT TO MISUSE DRUGS?

> TODAY YOU ARE GOING TO MAKE A BIG POSTER ABOUT ONE OF THESE IDEAS YOU HAVE JUST MENTIONED TO HELP DISCOURAGE YOUR FRIENDS FROM MISUSING DRUGS.

> THINK OF ONE IDEA TO MAKE A POSTER OF AND USE ANY OF THE MATERIALS SET OUT TO MAKE THE POSTER. REMEMBER TO THINK OF YOUR IDEA BEFORE YOU BEGIN WORK.

Hand out a sheet of tagboard to each student and have them begin. Help students focus on one idea by questioning each student early in the activity. Encour the class to use a variety of materials.

As students finish, have them put their posters up in t room for display. In evaluating the results, see if ea student depicted an attitude against the misuse of drug and if the concept of the picture was accurate. Hang t posters in the room. If some are particularly good, ha them hung in the halls or display cases.

**ING STRATEGIES**

to think of what they have learned
cohol, tobacco, and drugs.

LL YOUR FRIENDS AND OTHER PEOPLE
THEM DECIDE NOT TO MISUSE DRUGS?

NG TO MAKE A BIG POSTER ABOUT
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OUR FRIENDS FROM MISUSING

TO MAKE A POSTER OF AND USE
ALS SET OUT TO MAKE THE POSTER.
OF YOUR IDEA BEFORE YOU BEGIN

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the picture was accurate. Hang the
If some are particularly good, have
or display cases.

**ANTICIPATED STUDENT BEHAVIORS**

Students:

--respond with a variety of answers based on what they have learned in this core about alcohol, tobacco, and drugs.

UNIT II, CORE C

TALLYSHEET 2-7: Topics of Drug Posters

ACTIVITY 2-19: "A First-Hand Drug Report"

| | | Completed Poster | Subject and Message of Poster |
|---|---|---|---|
| Attach ID list here. | 01 | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |
| | | Yes No | |

Where were posters displayed? ______________________________

______________________________

______________________________

UNIT II, CORE C
ACTIVITY 2-19: "A First-Hand Drug Report"

Teacher

BSCS USE: Post ____ Tally ____ Rev ___

Activity name suggested by class:

| | | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| 1. | Date taught (month and date, e.g. 11/2) | | | | | | |
| 2. | Minutes of class time on science each day | | | | | | |
| 3. | Minutes of preparation each day | | | | | | |
| 4. | Students absent on each date (Use ID Number) | | | | | | |

5. Interest of class as expressed by apparent attention to what is happening.

Number of students responding with: Name students you noted especially:

| | (Number) |
|---|---|
| HIGH INTEREST | → ________ ________ ________ ________ |
| MODERATE INTEREST | |
| INDIFFERENCE | |
| MODERATE RESISTANCE | |
| STRONG DISLIKE | → ________ ________ ________ ________ |
| HARD TO RATE | |

6. Equipment in kit: ☐ None needed ☐ Satisfactory ☐ Too fragile ☐ Too complicated ☐ Difficult to use

7. Equipment I got: ☐ None needed ☐ Easy to get ☐ Hard to get, but okay ☐ Hard to get, add to kit ☐ Unobtainable, add to kit

8. Materials used:

| | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
| Revise slightly | | | | | | | | | | | |
| Revise much | | | | | | | | | | | |
| Worthless: omit | | | | | | | | | | | |

9. Maturity level is ☐ just right ☐ too childish ☐ too mature Explain:

10. Vocabulary level is ☐ just right ☐ too easy ☐ too difficult Explain:

11. Were teacher instructions clear enough to follow? ☐ Yes ☐ No -Pages and Problem:

12. Were clues to success and reviews of success helpful? ☐ Yes ☐ No -Why not?

13. Did the activity fulfill the purpose stated by the Guide? ☐ Yes ☐ No - Comment:

14. Were any parts of this activity omitted? ☐ No ☐ Yes - Explain:

15. Your rating of this activity:
☐ Worthwhile --keep as is ☐ Of value--needs the revision suggested ☐ Worth salvaging--make major changes described ☐ Worthless --drop it

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

| 8. Materials used: | Worksheet | | | Game | Slides (show slide nos.) | Transparency | | | Card(s) | Tape(s) | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | # | # | # | | # | # | # | # | # | # |
| Worthwhile as is | | | | | | | | | | | |
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| | | | |
|---|---|---|---|
| ☐ Worthwhile --keep as is | ☐ Of value--needs the revision suggested | ☐ Worth salvaging--make major changes described | ☐ Worthless --drop it |

SPECIFIC CONCERNS ABOUT THIS ACTIVITY:

16. There are always parts of activities that are good and need not be changed.
What parts of this activity should be retained when the curriculum is revised?
Page(s) ____________________:

17. Were there any problems concerning the resource person?
☐ No ☐ Yes: Comment.

18. Were there any parts of this activity you did not use?
☐ No ☐ Yes: What parts and why?

19. Were there any problems in making posters?
☐ No ☐ Yes: Comment.

20. Concern (or questions) about content:

21. Messages for staff (read immediately):

**ave you answered each question, attached annotated Guide, your revisions, student work, etc.?**

**IDE A**

BSCS Evaluation: EMH Feedback Form 1c

UNIT II, CORE C

ACTIVITY 2-19: "A First-Hand Drug Report"

Teacher ________________

## REPORT OF WHAT HAPPENED AND SUGGESTIONS FOR REVISION

1. Whenever practical write all over your second copy of the Guide. Tear out the activity and send the annotated Guide in with this form.
2. Make specific suggestions - exactly what you think should appear in the Guide.
3. Tell us what you did. Think of what you needed, what you had to work out for yourself, how you presented something to make it go over.
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5. As a reminder of things that help in revision, read through the following list and check off things you want to be sure to note this time. (We know you can't tell about everything every time!)

THE LESSON

☐ how you organized materials or class.
☐ things added (a question, a picture, etc.).
☐ equipment, supplies, visual aids.
☐ things that went wrong, misunderstandings.
☐ what you would do differently or avoid next time.

THE STUDENTS

☐ who had problems and what they were.
☐ how someone "caught on" (or who never did).
☐ who was really "turned off" (or on).
☐ reactions of parents, teachers, students.
☐ special evidence of learning or applying ideas.

☐ turmoil in the class caused by the activity, or disruptive students, or interruptions, and how you dealt with them.

## UNIT II
## REACTIONS TO CORE C

1. Was the background information for this core adequate? ☐ Yes ☐ No
Comment:

2. Was it clear to you why these particular activities were chosen and the direction they were leading? ☐ Yes ☐ No
Comment:

3. Did the activities fulfill the purposes stated in the Guide for this core? ☐ Yes ☐ No
Comment:

4. How would you increase the clarity of this core for students? (Help them understand why they are doing these activities.)

5. Is there a practical (take-home) value for your students in these activities? ☐ Yes ☐ No
6. If yes, what do you see as the "take-home" lesson? If no, what is needed?

7. In these materials, what things did your students find difficult to do?

8. Should there be more clues to success or reviews of success in this core? ☐ Yes ☐ No
Comment:

9. Was there too much reading and too many teacher directions? ☐ Yes ☐ No
Comment:

10. Did you make use of the Planning Guide? ☐ Yes ☐ No
Comment:

6. If yes, what do you see as the "take-home" lesson? If no, what is needed?

7. In these materials, what things did your students find difficult to do?

8. Should there be more clues to success or reviews of success in this core? ☐ Yes ☐ No
Comment:

9. Was there too much reading and too many teacher directions? ☐ Yes ☐ No
Comment:

10. Did you make use of the Planning Guide? ☐ Yes ☐ No
Comment:

11. If you could teach your way, rather than following the Guide, how would you do it?

12. Which of your students do you believe were unsuccessful in achieving the objectives of this core of activities? Explain.

BSCS Evaluation: **EMH Feedback Form 2a**

**SIDE A**

NEW STUDENTS ENTERING DURING THIS CORE

| Date Entered | Last Name Name Used | Ethnic Group | Sex | Birthdate | Test date | Test | To |
|---|---|---|---|---|---|---|---|
| | | W B S O | M F | | | W B O | |
| | | W B S O | M F | | | W B O | |
| | | W B S O | M F | | | W B O | |
| | | W B S O | M F | | | W B O | |

W = white
B = black
S = Spanish-American
O = other

W = WISC
B = Binet
O = other (name)

STUDENTS DROPPED IN THIS PERIOD

| Date Dropped | Last Name First |
|---|---|
| | |
| | |
| | |

ADDITIONAL INFORMATION ON NEW STUDENTS:

DENTS ENTERING DURING THIS CORE

| Birthdate | Test date | Test | Total | Verbal | Performance | Previous Test Score |
|---|---|---|---|---|---|---|
| | | W B O | | | | |
| | | W B O | | | | |
| | | W B O | | | | |
| | | W B O | | | | |

W = WISC
B = Binet
O = other
(name)

SIDE B